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ABSTRACT

The following papers were presented at a joint conference of the Mountain Plains Library Association, the North Dakota Library Association, and the South Dakota Library Association in September 1987: (1) "Catalog Backlog Project" (Kay Juricek, Tedine Roos, and Carol White); (2) "How Are We Doing? Using a Materials Availability Survey in an Academic Library" (Ronnelle K. H. Thompson); (3) "Integrating CD-ROM Technology into the Undergraduate Library" (Ethelle S. Bean); (4) "[PC] SAS as a Library Research Tool" (Maurice P. Marchant and Nathan M. Smith); (5) "Time Management in Academic Libraries" (Helen M. Gothberg and Donald E. Riggs); and (6) "Troubleshooting the Approval Plan: A Case Study from the Subject Specialist's Point of View" (Dennis R. Brunning). (EW)

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LIBRARIES AND THE LITERACY CHALLENGE: THE FRONTIER OF THE 90's

Proceedings of the Mountain Plains Library Association Academic Library Section Research Forum

TRI-CONFERENCE

Mountain Plains Library Association
North Dakota Library Association
South Dakota Library Association

September 23-26, 1987 Kirkwood Motor Inn, Bismarck, ND

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Proceedings of the Mountain Plains Library
Association Academic Library Section Research Forum

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Abstract

The expansion of materials resources not supported by parallel staffing support and acquisition policies in which availability of cataloging is not a consideration results in backlogs of uncataloged materials. The intent of the project is to determine if there are specific categories of materials for which LC copy will be found within a limited period of time, and alternatively if, in order to give equal treatment to all users, there are identifiable categories of materials which should receive immediate local cataloging attention. This project sampled a year's backlog at the University of Wyoming Libraries to learn some of the specific characteristics of these uncataloged materials. These include: Library of Congress priority, subject area, domestic or foreign publisher, purchase plan, cost range, year of publication,year of receipt, year of order and type of cataloging copy available on OCLC. In addition to giving information about materials acquired but unavailable for use in a specific collection, this study provides a model by which other backlogs may be assayed.

CATALOGING BACKLOG ANALYSIS

AT

THE UNIVERSITY OF WYOMING LIBRARY

Carol White

Tedine Roos

and

Kay Juricek

INTRODUCTION

Since the late 1960's when expenditures for library materials increased, articles have been written in library journals about cataloging backlogs, those materials acquired but not available for use due to lack of cataloging. Backlogs have been treated in the literature as a management problem which can be solved by adjustment in staffing patterns or less arduous cataloging criteria. The prescriptions for the elimination of backlogs rarely consider conditions existing in a particular library which predispose it to an arrearage as an ongoing condition, nor do they examine the nature of those materials consigned to backlogs.

Before proceeding to the method used to analyze the backlog and the findings of the project, an explanation of the factors which cause backlogs and which led to an accumulation of unprocessed materials in the University of Wyoming Library is in order.

Increases in acquisitions budgets are seen as unqualified boons for libraries. However, it costs money to spend money, and nowhere is this more true than in labor intensive organizations such as libraries. The personnel time needed to select, order, catalog and process materials is not usually considered when the prospect of sizable increases in the acquisitions budget is at hand. And conversely, a small or greatly diminished materials budget with no loss of staff is one sure way to guarantee materials are cataloged soon after arrival.

The relationship between the materials budget and the cataloging staff available is not the only factor contributing to an accumulation of unprocessed materials. Staffing levels within the cataloging department and projects such as retrospective conversion which can compete with new title cataloging also place a drain on staff time and contribute to the existence of backlogs.

In addition, the collection policies of a particular library play a role in the length of the interval between the time an

item arrives and the time it becomes available for use. Institutions which acquire domestic current imprints can generally be assured of a shorter time processing titles and less original cataloging than those which are in the process of retrospective collection building.

Finally, and far beyond local situations which affect cataloging backlogs, are the cataloging priorities which the Library of Congress observes. These priorities become de facto the priorities for all libraries because most libraries in this country use LC cataloging as the chief source of copy, and, only as a second choice, use member copy from the National Union Catalog or from one of the large utilities such as OCLC. Titles which have no cataloging copy available are left uncataloged, many times for years.

In the case of the University of Wyoming Library, all of these conditions, an increased materials budget, a minimal cataloging staff which was involved in other projects, an active collection development program, and heavy reliance upon Library of Congress cataloging have existed since the early 1980's. By the fall of 1986, the University of Wyoming Library's total purchased monographic backlog had reached 12,264 titles.

Library staff and users became aware of the lengthening interval between ordering, arrival, and availability, and had

differing convictions concerning the nature of backlog materials, usually based on their experience trying to retrieve or locate ordered titles. Because comprehensive data were lacking, different personal impressions of the contents of the backlog prevailed.

This project, undertaken at the University of Wyoming Library in the fall of 1986, did not try to manage or eliminate an existing backlog, but rather accepted a backlog as a fact of life for this institution and attempted to learn something about the materials which were delayed in receiving cataloging treatment. In so doing, it was felt that more efficient methods would be found that could be applied to managing backlogs in the future.

It was hoped that this project would enable the Cataloging Department to better use all cataloging staff time by distinguishing on arrival between those materials which could be deferred because eventually they would be cataloged, particularly titles which would be cataloged by the Library of Congress, and those which should receive immediate attention because they would predictably receive no cataloging from any source. And, if an imbalance by subject discipline existed in the backlog studied, these subjects could be identified as needing special cataloging attention in the future.

METHODOLOGY

Not only do the factors contributing to the development of backlogs vary by library, but the definition of what constitutes a backlog differs. George Pitternick in his 1969 study of processing arrearages in American and Canadian university libraries defined backlogs as 1) materials delayed indefinitely or halted in their progress through the series of processing operations from receipt to completion of cataloging for any reason whatever, and 2) books deliberately segregated for deferred treatment, housed in a separate area and located by special means.[1]

The book materials studied in this project at the University of Wyoming Library conform to both of these definitions. Almost all were purchased paper monographs. Some gifts were included. Microforms, rare books, and most gifts were not included in the sample.

At the University of Wyoming, the Cataloging Department staff search OCLC and catalog upon receipt all new titles which have Library of Congress cataloging copy, or Library of Congress cataloging copy for other editions of the same title. The titles which have member copy and those which have no cataloging copy are sent to the backlog. This backlog is maintained in order of date of receipt in the Library.

The project was designed and the survey completed during the period from September to December 1986. Development of the survey instrument began with a list of characteristics of materials compiled by the project team. Each characteristic was then considered as to the value knowledge of its distribution in the backlog would have. Those characteristics considered most useful became the variables in the survey questionnaire. Chosen as important characteristics or variables were: 1) Library of Congress cataloging priority, 2) subject discipline as defined by the University of Wyoming collection development areas and academic departments, 3) publisher (foreign or domestic), 4) type of purchase plan (approval, direct order, standing order or gift), 5) year of publication, 6) cost, 7) year and 8) month of receipt, 9) year and 10) month of order, 11) presence or absence of Library of Congress cataloging copy on OCLC, 12) presence or absence of member cataloging copy on OCLC, 13) year and 14) month of Library of Congress cataloging and 15) year and 16) month of member copy cataloging.

The materials surveyed for this study were received in the University of Wyoming Library between November 1984 and October 1985, and had been in the backlog at least one year but no longer than two years. A ten percent random sample, 660 titles, was pulled and numbered. Photocopies were made of the order slip, the title page and verso of the title page. With book in hand,

OCLC was searched, and a printout made. Library of Congress cataloging copy was printed if available, and, if no LC copy existed, the member copy with the oldest date entered was printed. Printouts and photocopies were kept together and keyed to the book's number. Each title was coded and numbered on a separate form using the book and the accompanying OCLC printout. The books were then returned to their numbered position in the backlog.

Of the characteristics coded, Variable 1, Library of Congress cataloging priority, and Variable 2, subject discipline, were the most prone to individual interpretation. In order to increase coding reliability, all the responses for these variables for each title were compared and the differences resolved. As the project progressed, fewer differences occurred as the responses by the three participants became more consistent.

The coded sheets for the 660 titles were entered on the University of Wyoming Cyber computer, data downloaded to a microcomputer, and analyzed using the Statistical Analysis System (SAS). Frequencies for all variables were generated. After these data were examined, relationships between variables were explored.

DATA AND DISCUSSION OF FINDINGS

For the purposes of this project, emulation of LC's cataloging priority decisions by the project team was needed. Although catalogers are familiar with the priorities established by the Library of Congress for its cataloging precedence, others may not be, and so a brief description of these priorities is useful.

Priority 1 includes titles in the Library of Congress Cataloging in Publication (CIP) program, primarily domestic current imprint trade publications and monographic Federal publications. Priority 2 includes titles which are high need and/or research value English language materials. This includes reference tools, publications of learned societies, guides to national library collections and substantial works of current interest such as: yearbooks, directories, indexes and first volumes of a monographic series. Priority 3 includes high need and/or research value non-English language and medium need research value English language titles. Substantial publications of national and international organization and substantial local histories are included here. Priority 4 is medium need and/or research value non-English language material. And Priority 5 comprises local government publications, belles lettres, popular instructional and devotional, sports, recreation, applied arts and crafts, and popularizations in all fields.[2]

The salient characteristics of the backlog were disclosed by determination of simple frequencies, or the number of titles which fell into the various categories for each variable.

Because titles received are cataloged immediately if Library of Congress copy exists, it was expected to find relatively few titles in the first two LC cataloging priorities, and this did prove to be the case. In Variable 1, LC cataloging priority, the assignments made by the project team showed the backlog materials to be primarily in LC cataloging priority 5 (331 titles, 50 percent). The next highest was LC cataloging priority 3 (243 titles, 36.8 percent). Relatively few were in LC Priority 1 and 2, and few in priority 4 because the library does not collect extensively in foreign language materials.

The second variable, titles by subject discipline, generated the most library staff interest. The backlogged materials proved not to be the scientific and technical materials some had thought, but instead the backlogged titles fell into language and literature (158 titles, 23.9 percent) followed by fine and applied arts (94 titles, 14.2 percent) and history (67 titles, 10.2 percent). The remaining backlogged titles were scattered among other subjects.

The next variable, foreign or domestic publisher, showed

backlogged titles somewhat more likely to be published by foreign publishers (368 titles, 58.5 percent) than domestic publishers (274 titles, 41.5 percent). The purchase plan variable revealed that more of the backlogged titles were acquired by direct order (319 titles,48.3 percent) than were acquired by an approval plan (257 titles,38.9 percent).

The variable for type of cataloging disclosed Library of Congress cataloging copy was found for 206 titles or 31.2 percent and member copy was found for 395 titles or 59.9 percent. No cataloging copy was found on OCLC for 59 titles, or approximately 9 percent of the total 660 backlogged titles.

In summary then, the 660 backlogged titles were found to have lower LC cataloging priorities, to be published more by foreign publishers, to be slightly more likely to be direct orders and to be primarily from the academic disciplines of language and literature, fine and applied arts, and history. Almost all of the titles in the sample had some kind of cataloging copy available. Ninety one percent or 601 titles were found on OCLC.

After the simple frequencies for the variables were obtained, further information was requested on the 206 titles which had received LC cataloging while aging in the backlog, and on the 59 titles for which there was neither LC cataloging nor

member copy cataloging found on OCLC.

No CIP records were found in the LC cataloged titles in this sample. Thirty-six of the 206 LC cataloged titles were coded which fell within LC cataloging priority 1 or LC cataloging priority 2. This can be discounted to some extent because titles undergoing a first pass in cataloging could have been missed by new staff who were being trained to search and catalog on OCLC, and some titles might not yet have been loaded to OCLC. It does illustrate, however, that LC cataloging for current domestic imprints and high priority material may not always be available immediately on OCLC.

Of the 206 titles with LC cataloging copy, 82 were in LC cataloging priority 3, but interestingly LC also cataloged 80 titles in LC cataloging priority 5. Because belles lettres are included in LC cataloging priority 5, it was not surprising then that so much emphasis was given to language and literature. Curiously, 119 of the 206 LC cataloged titles were foreign imprints. Over half, 113 titles, of the 206 titles cataloged with LC copy, were purchased through an approval plan.

In contrast, of the 59 titles with no cataloging copy, 42 titles were in the LC cataloging priority 5. By subject discipline, 14 titles fell into language and literature, 11 titles in the life sciences, and from 1 to 6 titles in various

other disciplines. The titles were fairly evenly divided between foreign and domestic publishers. Of the 59 titles, 36 were acquired by direct order, 16 of the 59 titles were acquired by gift, and only 3 titles were acquired by approval plan.

The methodology used to determine the nature of the University of Wyoming's backlog did provide desired information. The data obtained from the study could be used to generate additional information. The variables least useful to this study were those concerned with purchase price and month and year of materials received in the library. These, however, could serve a purpose if the titles studied remain uncataloged for many years, or if the data in this study were compared to data from future studies performed at this institution or at other institutions. The variable for month and year of LC cataloging proved useful to the cataloging staff in identifying searching problems common to new employees.

CONCLUSION

It was determined from the study that there is indeed a substantial percentage of this library's backlog which will require original cataloging. By examining the nature of the titles by subject, and purchase plan, there is a clear indication that sorting books on arrival for original cataloging is possible given the brief data available on the order slip. This procedure

would be more efficient than waiting for copy, and would increase the titles available on OCLC for other libraries.

Conversely, those titles which can be predicted to be cataloged by LC and/or other member libraries, would continue to be sent to the backlog, allowed to age for six months to one year, re-searched, and cataloged.

It was confirmed that the University of Wyoming Library's backlogged materials contained a very high percentage of LC cataloging Priority 5. It was determined that what is considered to be research material at this institution is not necessarily considered to be an important cataloging priority at the Library of Congress. For other libraries, and for their users, there should be concern as to the content of the national database, and which titles and kinds of materials can and cannot be located for information sharing. This study suggests the need to investigate the nature of backlogs in all libraries and focus national attention on sharing the cataloging of materials not done by the Library of Congress.

NOTES

1. Pitternick, George, "University Library Arrearages," Library Resources and Technical Services 13 (Winter 1969): 102-114.

2. Cataloging Service Bulletin 22 (Fall 1983): 2-4.

Cataloging Backlog Analysis Form

No._____

V.1
Library of Congress Priorities

_____1 CIP
_____2 Engl hi need
_____3 Med engl hi need for
_____4 Med for
_____5 Low for

V.2
Subject Disciplines

_____01 Agriculture
_____02 Business
_____03 Earth Sciences
_____04 Education
_____05 Engineering
_____06 Fine and Applied Arts
_____07 History
_____08 Journalism and Communication
_____09 Literature and Language
_____10 Life Science
_____11 Medicine, Pharmacy, Nursing
_____12 Math and Computer Sci.
_____13 Physical Sci.
_____14 Political Sci.
_____15 Phys.Ed. and Recreation
_____16 Religion and Philosophy
_____17 Sociology, Psych., Anthro.
_____18 Law
_____19 Misc.

V.3
Publisher

_____1 Domestic
_____2 Foreign

V.4
Purchase Plan

_____1 Approval
_____2 Direct Order
_____3 Gift/Exchange
_____4 Standing Order

V.5
Year of Publication

_____01 Pre-1700
_____02 1700-1799
_____03 1800-1899
_____04 1900-1909
_____05 1910-1919
_____06 1920-1929
_____07 1930-1939
_____08 1940-1949
_____09 1950-1959
_____10 1960-1969
_____11 1970-1979
_____12 1980
_____13 1981
_____14 1982
_____15 1983
_____16 1984
_____17 1985
_____18 1986
_____19 1987
_____20 1988
_____21 1989

V.6
Cost

_____1 Less than $25
_____2 $26-$50
_____3 $51-$75
_____4 $76-$100
_____5 $100-$499
_____6 More than $500
_____99 None

V.7
Year of Receipt

_____1 1984
_____2 1985
_____3 1986
_____4 1987
_____5 1988

V.8
Month of Receipt

_____01 January
_____02 February
_____03 March
_____04 April
_____05 May
_____06 June
_____07 July
_____08 August
_____09 September
_____10 October
_____11 November
_____12 December
_____99 None

V.9
Year of Order

_____01 1979
_____02 1980
_____03 1981
_____04 1982
_____05 1983
_____06 1984
_____07 1985
_____08 1986
_____09 1987
_____10 1988
_____99 None

V. 10
Month of Order

_____01 January
_____02 February
_____03 March
_____04 April
_____05 May
_____06 June
_____07 July
_____08 August
_____09 September
_____10 October
_____11 November
_____12 December
_____99 None

V. 11
LC Cataloging Copy

_____1 LC
_____2 CIP
_____99 None

V. 12
Year of LC Cataloging

_____1 Pre-1984
_____2 1984
_____3 1985
_____4 1986
_____5 1987
_____6 1988
_____99 None

V. 13
Month of LC Cataloging

_____01 January
_____02 February
_____03 March
_____04 April
_____05 May
_____06 June
_____07 July
_____08 August
_____09 September
_____10 October
_____11 November
_____12 December
_____99 None

V.14
Member Copy

_____1 Member
_____99 None

V. 15
Year of Member Cataloging

_____1 Pre-1984
_____2 1984
_____3 1985
_____4 1986
_____5 1987
_____99 None

V. 16
Month of Member Cataloging

_____01 January
_____02 February
_____03 March
_____04 April
_____05 May
_____06 June
_____07 July
_____08 August
_____09 September
_____10 October
_____11 November
_____12 December
_____99 None

HOW ARE WE DOING? USING A MATERIALS AVAILABILITY SURVEY IN AN ACADEMIC LIBRARY

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Abstract

Two years after the appointment of a new director of the Augustana College Library, which was followed by a new program of bibliographic instruction, we wanted to know how well we were meeting the needs of our users. We adapted a materials availability survey form, designed originally for use in a public library. The survey was administered to our library users randomly throughout National Library Week 1986 and will be administered again during the same period of 1987. From the first survey we discovered useful information about our user population, our fill rate, and the amount of reference assistance sought and found. We expect to use the same survey instrument this spring, which will yield comparative data by the MPLA Tri-Conference in September.

HOW ARE WE DOING? USING A MATERIALS AVAILABILITY SURVEY IN AN ACADEMIC LIBRARY

Ronelle K. H. Thompson
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General Background

Public libraries were the first to develop and use materials availability surveys as performance measures. Although they have been exploring their use for some time, academic libraries have been slower in adapting these kinds of evaluative tools to their particular situations. In their study of the way academic librarians use information for decision making, Charles McClure and Alan Samuels reveal that the librarians who participated in their study had "little interest in user input to decision making" (492). Rather, McClure and Samuels note, the respondents showed an "overwhelming preference for internal information sources in decision making" (491). In a later study McClure states that "the views and attitudes expressed during these interviews frequently suggest that significant organizational change will be necessary before cost and performance measure data can be integrated successfully into academic library decision making" (329).

In 1982 Paul Kantor developed a set of performance measures in cooperation with the Association of Research Libraries' statistics committee. Kantor notes that "although the measures can be used to compare one library with another,

they are more suited to internal analysis, rather than ranking and comparison of institutions" (2). In an article about the newly-revised Standards for College Libraries, Theresa Taborsky points to a particular need for output measures used for internal analysis to "prove a relationship between the 'Standards' and the contribution of a library to the improved educational level of students, and to the productivity of the faculty" (5).

Kantor sees objective measures as having the following three benefits:

> 1. Objective data simplify the process of budget justification, and build a link in the 'institutional thought processes' between the costs of library operations, and the services rendered.
> 2. Objective data may identify aspects of service that are not performing as well as expected, and lead to sound suggestions for improvement.
> 3. Objective data provide a foundation for sharing the costs of library operation among the user organizations, and for documenting the costs of library support to research and education. (1)

Specific Background

Two years after the appointment of a new director of the Augustana College library with a mandate from the administration to revitalize the role of the library on campus, we wanted to know how well we were meeting the information needs of our users. A new program of bibliographic instruction had resulted in increased use of our library by faculty and students alike. A new reference librarian had worked closely with faculty on library assignments and collection development. It seemed an

appropriate time to attempt a formal measure of our efforts.

Objectives

We identified the following five objectives for our evaluation:

1. To use a measurement instrument that asked for objective responses.
2. To concentrate our efforts on adapting a proven measurement instrument rather than developing our own.
3. To use a survey format that would provide information on our user population generally.
4. To ascertain the degree to which our collection was meeting the information needs of our primary college clientele.
5. To study the correlation between users looking for information and whether they sought assistance from library staff members.

We wanted to use a survey that required responses which would provide useful information with which to measure our performance in an objective manner. We did not want to ask open-ended questions about all aspects of the library, but wanted to focus, rather, on information needs that related to collection development and bibliographic instruction. Further, our small staff made it unrealistic to consider creating a survey instrument. We recognized from McClure's work that "public and state libraries have a long and productive involvement with the development and testing of planning and performance measures" (330). We chose to adapt a materials availability survey form originally designed for use in a public library (Zweizig 65-74). Our reference librarian had previously worked with this survey in a public

library setting and was intrigued to see if it could be successfully adapted for an academic library.

To identify the variety and number of non-Augustana library users, we included a question asking the respondents to describe themselves as Augustana students, Augustana faculty or staff, students at other institutions (with a place to identify the institution), community residents, or "other." Our library is open to the public, and reciprocal borrowing arrangements allow library cardholders from the Sioux Falls Public Library, the Sioux Falls College Library, and the North American Baptist Seminary Library to check out materials from our collection.

Finally, we were interested in knowing what information our users were looking for and how often they did or did not find that information in our library. Our specific concerns were how well we were meeting the information needs of Augustana students and faculty, whether those users having difficulty locating materials sought and found the help of library staff members, and whether our bibliographic instruction program had made our users more successful in their information searches.

Administering the Survey

The survey was administered to all library users at selected times throughout National Library Week during both 1986 and 1987. The survey hours were representative of all the hours that the library is open: morning, afternoon, evening, and weekends. Survey times were chosen to avoid

scheduled class visits to the library for bibliographic instruction.

During the survey times, entering library users were greeted by a library staff member--from the library director to selected library assistants. Patrons were handed pink forms and told that the library was conducting a survey to see if the users found what they were looking for while using the library. For those patrons who were coming to study or use copy machines, we explained that the form had a place to indicate that library use as well. Pencils were available for those who needed them, and containers to return surveys were placed strategically throughout the library.

Survey Results

We are aware that there is disagreement about the validity of this kind of study. George D'Elia maintains that "data are not measuring library performance or output *per se* but rather are measuring patron success within a library" (106). D'Elia's observations were made in conjunction with the use of a materials availability survey in the St. Paul Public Library. Assuming that D'Elia is correct, the information remains useful for us in an academic library, since our particular performance concerns have to do with the adequacy of our collection and the relationship of our bibliographic instruction efforts to patron success in using the library.

Of the 1096 surveys distributed in 1986, 857 were returned (78%). Of the 797 surveys distributed in 1987, 585

were returned (73%). We attribute the distribution of 300 less surveys in 1987 to the fact that National Library Week fell before our Easter break in 1987 rather than after it, as in 1986. As with most academic libraries, our student use increases steadily as the students perceive the end of the semester approaching. The survey results are summarized in detail below.

TABLE 1

USER POPULATION

	1986	1987
Augustana students	647 (83%)	479 (82%)
Augustana faculty & staff	21 (3%)	24 (4%)
Students at other institutions	55 (7%)	36 (6%)
Community residents	45 (6%)	31 (5%)
Other	11 (1%)	15 (3%)

As Table 1 indicates, 86% of our users classify themselves as Augustana students or faculty. The remaining 14% of our users are high school students, college students from area institutions, community residents, or "other." The "other" category was usually described as alumni or out-of-town visitors.

TABLE 2

TITLE FILL RATE

	1986	1987
Number sought	364	235
Number found	258	190
Title fill rate	71%	81%

TABLE 3

TITLE FILL RATE FOR AUGUSTANA USERS

	1986	1987
Number sought	300	196
Number found	205	161
Title fill rate	68%	82%

Fill rates are compiled by dividing the number of items found by the number of items sought. The formula is the same for all three fill rates being measured: title, author-subject, and browser. A sample of at least 100 surveys with information in a specific fill rate category is necessary to assure that the results for that fill rate measure are 95% accurate. The 5% error factor means that a library has to raise its fill rate by at least five percent between surveys in order to document progress.

The title fill rate describes the percentage of users who found book or periodical titles such as Language Across the Curriculum or Newsweek. Table 2 shows a significant increase in title fill rate of 10% for all library users in 1987 as compared with 1986. Table 3 documents an increase in title fill rate for Augustana users of 14% in 1987 as compared with 1986, indicating improvement that can likely be traced to our aggressive program of bibliographic instruction.

TABLE 4

AUTHOR-SUBJECT FILL RATE

	1986	1987
Number sought	130	85
Number found	101	64
Author-Subject fill rate	78%	75%

TABLE 5

AUTHOR-SUBJECT FILL RATE FOR AUGUSTANA USERS

	1986	1987
Number sought	105	62
Number found	84	47
Author-Subject fill rate	80%	76%

The author-subject fill rate describes the success of users who looked for material on a particular subject, such as "child abuse" or material by a specific author, such as works by Robert Bly. Each author or subject is counted, not the number of items or formats found. According to this measure, our users find adequate material on authors or subjects three times out of four. However, in 1987 our survey did not result in the necessary 100 surveys with information in the author/subject category to provide a 95% accurate measure. Either we had fewer users looking for information in these categories or fewer who interpreted their needs relative to the survey in this manner. Regardless, those users doing author-subject searches in 1987 were slightly less successful than in 1986.

TABLE 6

BROWSER FILL RATE

	1986	1987
Number sought	218	172
Number found	151	111
Browsers fill rate	69%	65%

Materials availability surveys generally support the supposition that library users like to browse. They like to look at new book displays and topical exhibits. Almost a quarter of the library users who returned their surveys indicated that they had browsed, and approximately two-thirds of them found something of interest. The results of this measure support the value of academic libraries providing display areas for their patrons.

TABLE 7

USERS ASSISTED BY LIBRARY STAFF

	1986	1987
Users responding to question	156	115
Users assisted by staff:		
Materials sought	88	61
Materials found	71	55
Fill rate	81%	90%
Independent users:		
Materials sought	68	54
Materials found	58	43
Fill rate	78%	80%

To ascertain the possible relationship between our library's bibliographic instruction program and our users' success rate we reviewed all surveys indicating materials sought either by title or author-subject to compile Table 7.

Not all users who indicated that they had looked for materials in the library completed the question as to whether they were assisted by a library staff member. We chose to tabulate only those survey forms that were marked with either a "yes" or "no" as to whether they were assisted by a library staff member.

Table 7 reveals that a high percentage of this group found materials, whether they were assisted or not. The two survey years represented years three and four of an aggressive bibliographic instruction program for our students, as well as area high school users of our library. Although the correlation is not direct, the results of Table 7 support our contention that the bibliographic instruction program has been effective in educating our patrons for independent library use, while encouraging them to ask for assistance if they experience difficulties in locating needed information.

TABLE 8

OTHER USES OF THE LIBRARY

	1986	1987
Came to study using own materials	331 (74%)	261 (63%)
Came to use computers or copiers	62 (14%)	50 (12%)
Other	55 (12%)	101 (25%)

Table 8 reminds us that students who use the academic library as a study hall or computer/copy center may have different expectations than those students who are using

traditional library services. In both years of our survey, more than half of the patrons indicated that while they were in the library they made use of a service listed under "other." Of interest to our staff was the large number of non-Augustana users who indicated that they came only to study in the building.

Summary

After the final survey sheets were tabulated for each year and the results were made available for library staff to review, we felt that the hours of greeting users, handing out surveys, and answering questions about the survey had been worth the effort. As with any project involving the public at random, we experienced some problems in administering the survey. In a college library, of course, the same students come and go throughout the day--and certainly throughout any given week. Students were asked to complete only one survey during any one day, but could conceivably have been asked to complete as many as four forms over the total survey period. This caused frustration on the part of some students, but we persevered, knowing that the same students use the library for a variety of reasons, each of which would be valid to document for purposes of the survey.

The library staff members who participated in handing out surveys felt that the opportunity to express to library users our concern about the level of service we provide to them was an important public relations encounter. Staff members were instructed to be polite and pleasant regardless

of user response. It was felt that greeting users with an immediate image of interest for their information needs emphasized the general approachability of personnel in the Augustana library.

We found the survey results of 68-82% fill rates for title, author, or subject searches to be acceptable. Reviewing the areas where information was not found has been useful for ongoing collection development. The survey results point to a high success rate on the part of our library users in finding materials in our library. We believe that this is the direct result of the establishment of a bibliographic instruction program that is integrated into the curriculum.

We intend to include the results of these surveys in reports on library activities to the administration and faculty. In addition, we expect the objective nature of the survey information to be useful in preparing and defending budget requests for additional library support.

In future surveys we would need to consider adding questions that would be specifically directed towards each user's bibliographic instruction background. We would also want to consider the possibility of surveying for a longer total time, but spread over the semester. These materials availability surveys have provided us with objective performance measures of our collection, staff, and programs and have helped us identify specific areas of the collection that need improvement.

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INTEGRATING CD-ROM TECHNOLOGY INTO THE UNDERGRADUATE LIBRARY

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Abstract

An overview of CD-ROM technology which will include what discs are available, what the hardware requirements are, vendor data, and costs. The paper will cover what CD-ROM are currently available to the students and faculty; how they were introduced and received at DSC; and what training students, faculty and library staff receive.

INTEGRATING CD-ROM TECHNOLOGY INTO THE UNDERGRADUATE LIBRARY

INTRODUCTION

Now is an exciting time to be a librarian. As we face the coming of the information age, librarians have opportunities to develop their skills and library services in ways undreamed of by Melville Dewey, of decimal system fame; Sarah B. Askew, developer of the concept of interlibrary loan; or any of the other library pioneers. The computer and its by-products are effecting a quiet, continual and amazing revolution on libraries of all types and sizes.

The goal of this paper is to discuss just one part of this revolution, the CD-ROM disc and reader, and its effect on one institution, the Karl E. Mundt Library at Dakota State College. First, I will begin by giving an overview of CD-ROM technology, including information about hardware requirements, CD-ROM disc availability, vendor data and all-important cost information. Next, I will briefly set the stage by telling you about Dakota State College so that you will have a bit of background information. Finally, I will tell you how the two were introduced and CD-ROM was integrated into the daily reference routine at the Mundt Library.

WHAT IS THE CD-ROM TECHNOLOGY?

Since it is almost impossible to open a journal of library literature today without running into at least an advertisement

for a CD-ROM product, if not an article, many of you have at least rudimentary knowledge of the term even if you haven't had hands on use of the technology.

CD-ROM is an optical disk technology. The initials stand for compact disk read only memory. CD-ROM uses the same metal-coated clear plastic platters that are now familiar in music stores everywhere as the CD or compact disk. Despite their small size (about 4 3/4"), each disk has approximately eight billion pit locations etched by a laser along a three-mile spiral track, storing: 75 minutes of music or 275,000 pages of text or 1,500 computer graphics or 9,000 pages of graphics and 8-bit stereo audio or 1,800 digitized images or 4,500 hours of digitized voice! A very versatile storage medium as you can see. Without beating a dead horse, CD-ROM has many attributes which make it of great interest to libraries: it is small, unalterable, removable, durable, accessible by computer, flexible, and has a large storage capacity.

The CD-ROM read device is inexpensive (in the relative scheme of things), currently about $750, and going down in price. The read device is a microcomputer peripheral, but it can also be configured as a mini/mainframe peripheral. The leaders in the hardware production are Phillips and Hitachi although Sony and others are in the game. Some hardware manufacturers are waiting to see what IBM will do. The growth of CD-ROM players would be greatly increased if IBM were to enter the market with either its

own or a purchased product, says Robert Katzive, of "Disk Trend Report."

There is a developed industry standard, the "High Sierra" CD-ROM Guidelines, that, by now, will have probably been adopted by the National Information Standards Organization since they were in the review process at the time of this writing. IBM's participation in the High Sierra standards negotiations was taken as a positive indication that it has interest in the technology. The establishment of the standard format will enable software publishers and providers of data services to distribute their products on uniform disks. An industry standard this early will go a long way to ensuring that the CD-ROM will not go the way of Selectavision, videotex, and other technologies that never got a firm hold in the market. It might be important to note here that the Association of American Publishers has already established a standard for the electronic manuscript to be stored as a searchable database and processed on any computer because the publishers agree to use the Standard Generalized Markup Language for manuscript entry.

Microsoft, developer of the MS/DOS and PC/DOS software that has become a microcomputer standard, is positioning itself as an early leader in CD-ROM products, as are Information Access Company (IAC) and SilverPlatter Information Services. On-line services like DIALOG, BRS, Dun & Bradstreet, and Dow Jones have begun to make some of their databases available on CD-ROM.

According to Barbara Sehr, in an article in November 1986 issue of "Datamation", software publishers, at this point, are approaching the CD-ROM market with caution. The reason for their tardiness, she says, is that no royalty structures or pricing calculations have been established. She drew an analogy to the early days of VCR's. Everyone wanted a piece of the rich video royalty pie. Early video tapes sold at prices that hovered near the $100 mark. As a result, most videos were rented rather than sold and a new retail industry was born. Now, video tape prices are dropping to around $30 to encourage sales rather than rentals. Ms. Sehr believes the same pattern will hold with CD-ROM. Publishers will have to figure out what a fair royalty is and that for the most part will determine prices for CD-ROM products because the actual costs of producing CD-ROM software likely fall well below the cost of book publishing. Production costs currently range between $2 - $5 per disc and that cost will probably be reduced further with high volume production. Replication costs are likely to follow patterns set by the duplication of the floppy diskettes and come down even lower.

DAKOTA STATE COLLEGE

In 1984, Dakota State College underwent a radical mission change at the instigation of the South Dakota Legislature. DSC was mandated to "provide instruction in computer management, computer information systems, electronic data processing and other related undergraduate and graduate programs...and to offer two-year, one-year and short courses for application and operator training in

the areas authorized..."(House Bill 1357.) This redirection of the college, which had been primarily a teacher education institution with a number of liberal arts and many two-year programs, was instigated to meet the challenges and oportunities of South Dakota's changing economic needs. Needless to say, the effect on the curriculum was radical, but out of the change came quality.

Today, Dakota State College enhances scholarship, research and service by integrating computer application and advancing technology. Its programs are boldly creating educational programs for a changing economic scene without sacrificing traditional excellence.

An education at DSC includes the use of computers throughout all aspects of the curriculum. A freshman-level required course, Computers Concepts, prepares all students to use computers throughout their college careers as well as in their chosen professions. Students learn to use word processing to prepare reports and papers as well as spreadsheets, database and graphics programs to display numerical and graphical data. Students learn to use microcomputers with the most popular commercial software used in business and education today; they also learn to use the campus mainframe computer and the campus-wide LAN (Local Area Network.)

Within each major course of study is integrated an appropriate use of computer technology. Faculty members use computers to

help students get more from their college education as well as teaching them to use computers as tools in their chosen professions. Each of DSC's majors programs blend the latest of computer and information systems technology with a solid foundation in the major discipline. For example, DSC was founded in 1881 for the preparation of teachers -- the first public institution of its kind in Dakota Territory -- and that heritage of educating the teachers of future generations continues. The college substantially revised its teacher education program to enhance education through the application of appropriate computer technology. DSC's teacher education programs are now based on the principles, methods and psychology of education with the incorporation of computer technology as an administrative and educational tool.

Even the traditional English class has been touched by computers. Our English faculty have developed a computer program called WACKFORD. Using WACKFORD, the student keys in themes or research term papers into the campus mainframe, uses mainframe, uses WACKFORD's analysis capabilities to revise it until satisfaction and/or deadlines are reached and electronically transmits it to his faculty computer mailbox. No more excuses like "I slid it under your office door two weeks ago! Do you mean you never got it?" because WACKFORD logs date & time of receipt. The faculty member then grades the paper electronically and if in doubt about some research prints off a copy to take and check sources in the library. The graded and commented-upon paper is then sent back

to the student, again electronically.

While some colleges expect students to buy computers, DSC makes computers accessible to all students. For example, the ratio of students to computers at DSC is 10 times better than the national average. Computer laboratories with both mainframe and microcomputer access, including the latest software, are available in each residence hall and in laboratories located in many campus buildings. To provide ample facilities for both instruction and outside course-work, labs are provided for faculty use directly in teaching and for general access. For the convenience of the student, 24-hour computer access is provided. The college also makes available to faculty the DSC Teacher's Assistant Series, a software package developed at DSC that allows easy preparation of computer interactive worksheets, tests, and electronic blackboards.

CD-ROM MEETS DSC

I included all the information about DSC so that you are aware of the environment that our library fits into and to the type of student and faculty to which our CD-ROM products were introduced. We chose to go into CD-ROM products when we realized how large an information and technology perception gap had developed between the library and the rest of the campus. Before CD-ROM, we provided on-line bibliographic database searching through BRS and DIALOG, were tied to OCLC for cataloging and to EasyLink, MINITEX and OCLC for interlibrary loan support. However, these are not

generally visible to the average library user. We needed some very visible hands-on technology to show we were not a relic of the 19th century. CD-ROM provided an answer.

Interdepartmental cooperation helped us to obtain our first CD-ROM reader. David Zolnowsky, our campus Director of Technical Services (Computers) came to our rescue. He is an enlightened individual who believes that after his department develops a service it should be relocated to an appropriate campus division or department for continuation. Technical Services agreed to purchase a CD-ROM reader and PC-SIG software to the Mundt Library if we would agree to expand, develop and support the service. We also had to agree to lend the equipment back should they need it for a demonstration. The PC-Sig CD-ROM disc contains all of the public domain software for the IBM and compatible in the PC-Sig User's Group holdings -- a very popular item. We came to terms with their offer and immediately offered our copy of Grolier's Electronic Encyclopedia as proof of our good faith.

As soon as the CD-ROM reader was in place, we scrounged enough money out of the budget to purchase SilverPlatter's ERIC CD-ROM discs and we ordered IAC's INFOTRAC II for a demonstration trial. Then we started a publicity and training campaign. We announced CD-ROM's arrival with an open house to which we invited both the DSC and Madison community as well as some area VIPs. At the noon open house we served refreshments and gave demonstrations of Grolier's Electronic Encyclopedia. The open house was very

successful with one individual driving up from Sioux Falls to see the new technology. The open house also resulted in a very favorable editorial in the local paper, the Madison Daily Leader. We followed this up with several stories on CD-ROM and what we had in the Mundt Library in the campus and local papers and on radio. Our administration was equally helpful in creating awareness of our CD-ROM by requesting demonstrations for all of our campus visitors.

Because we only had the one CD-ROM reader, we had to develop a way to make the software available, secure, yet easily accessible. We determined that our best bet would be to locate the equipment close to the front desk so that it was cleary visible from the front entrance doors and near the Public Services Librarian. We improved on this visilibity by creating a permanent eye-catching sign/display above the equipment. We then placed all three of our CD-ROM kits on reserve at the front desk and charge each of them out as a unit. To avoid long lines at the equipment, we set a 30-minute time limit at any one time and so far no one has complained or abused the limit.

We had had success in one-on-one training situations and with our demonstrations to small groups but we still thought we could proselytize further. Memos went out to the four campus Division Heads offering to show and tell at their division meetings. Before the end of the Spring semester 1987 we only had time to arrange one with the teacher education division. Our purpose was

to educate the faculty to the possibilities of ERIC on CD-ROM searching, to encourage them to integrate its use into their regular class and services of the Mundt Library. We succeeded beyond our hopes. Several of the faculty arranged for one-on-one training for themselves and asked for bibliographic training for their classes within a week of the meeting. During the summer, each of the members of the division who are teaching summer classes have requested training sessions for their classes. Because many of these classes are made up of area classroom teachers in search of renewal credits, they in turn will tell their friends back home of its availability.

IAC's INFOTRAC II arrived shortly before BEI '87, our annual campus outreach forum, was scheduled. We thought we would take advantage of the timing and set up a large hands-on display of INFOTRAC II vs Magazine Index on microfilm vs Reader Guide volumes under an orange and black banner which read "LIBRARIES LEAD IN INFORMATION TECHNOLOGIES." It was such an effective display that we left it up for the remainder of the semester and into the summer.

CONCLUSION

CD-ROM is a wonderful tool. We have integrated it into our day-to-day activities and it has proved to be very useful in drawing people into the library again and again. The PC-Sig public domain software has been extremely popular. Both ERIC and the Electronic Encyclopedia have been very effective as bibliographic

instruction tools to teach on-line searching techniques and unexpectedly as public relation tools to increase understanding of library services and build bridges across the campus.

Where do we go from here? Our plans for the immediate future are to expand on the holdings of CD-ROM discs, possibly with Microsoft's Bookshelf and others appropriate to our curriculum. We will incorporate their use even more fully into our bibliographic instruction program as an off-line training aid for end-user searching. We have added a program on CD-ROM technology to the DSC Speaker's Bureau listings. We will also look for ways to expand access to the CD-ROM product databases via networking on the campus LAN or mainframe. David Zolnowsky and the staff of the Computer Center will continue to work with us to improve the technology environment of the library. In fact, at the time of this writing, we have plans to move the 24 hour DSC Electronic Bulletin Board over to the library shortly. As I said when I started, now is an exciting time to be a librarian.

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SAS AS A LIBRARY RESEARCH TOOL

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Abstract

SAS, like SPSSx, is a statistical software package available both on the IBM or VAX mainframe computers and on the IBM PC. Because of its power it is a tool useful for librarians who are involved, or who may want to become involved in research and statistical analyses of data. SAS permits manipulation and rearrangement of data as well as simple and complex analyses. To demonstrate this statistical package the authors will use real data gathered in a survey of library users of the Provo Public Library.

By way of introduction, we are faculty members in the Library School at Brigham Young University where we teach research methods and guide students doing their research projects. For nearly 10 years we have used SPSS (Statistical Package for the Social Sciences) on the mainframe for statistical analyses. Several years ago we made the switch to the upgraded SPSSx. Last year the University acquired a site license for PC SAS and we have been evaluating it, looking at the possibility of teaching PC SAS to our students instead of SPSSx. The cost of $100 per year per computer for five student computers is considerably less than our cost of $1000 to $1500 per year to use the mainframe. Cost, however, is not the only consideration as you will learn from our report.

WHAT IS PC SAS?

The PC SAS System is a software system for data analysis and report writing. It is composed of several components. Base SAS software allows us to store and retrieve data values, to modify data, compute simple statistics, and create reports. Add-on components provide for graphics, forecasting, data entry, and sophisticated statistics. Base is required; the other components are optional.

PC SAS is available for use in IBM and compatible personal computers. SAS is also available for use on mainframe computers. Many of the procedures are the same. If you know how to use SAS for one mode, learning to use the other one will be relatively simple. PC SAS for personal computers is currently the state of the art, however, and the mainframe software is being upgraded to

that level. Because this presentation is addressing personal computer statistics systems, you might want to know that with PC SAS you have their most up-to-date product, which is known as release 6.02.

HOW IT IS PACKAGED

PC SAS for personal computers comes to the customer as a set of floppy diskettes that must be loaded onto a hard disk. First, you load an installation diskette, then a set of 12 diskettes that cover Base, then other sets required for the optional components. The statistics component, known as STAT, is on a set of six diskettes for example. These diskettes provide the directions needed for loading them. You just need to follow directions as they come up on your screen.

DOS AND HARDWARE REQUIREMENTS

SAS requires certain characteristics to run on an IBM PC or compatible. For an operating system, it requires PC DOS. Although the PC SAS System may install and execute correctly on some computers running under MS DOS, you could encounter problems, particularly with incompatible RESTORE commands and incompatible video display interfaces. SAS does not currently support the PC SAS System under MS DOS. Release 2.0 of PC DOS is adequate, but you might consider getting a more recent release, like 3.2, which will handle amounts of data larger than 10 Mb. The computer must have at least 512K of internal memory for operation with a minimum of 450K free memory; 640K internal memory is better. The amount of hard disk space depends on which

components you will be including. For example, PC SAS/BASE uses 4 Mb and STAT uses 2 Mb. You can run PC SAS on a 10 Mb hard disk, but you might find a 20 Mb disk preferable and a bit faster. Remember, too, that the hard disk will be holding the DOS files, so that it will contain about 8 Mb if you intend to use it for statistics. Add a word processing system and a couple of other software packages, and you will soon use up 10 Mb.

HOW IT LOOKS ON YOUR PC?

PC SAS is displayed on the screen as a set of three windows that make up the PC SAS Display Manager System (see Table 1). You move among these windows to execute various commands using display manager commands. The windows are called the PROGRAM EDITOR, the LOG, and the OUTPUT.

You enter the SAS statements in the PROGRAM EDITOR window, which is the bottom window. The LOG window displays messages from the system as well as your statements as they are executed: in essence, it lets you know how the computer is progressing through the program you gave it. The OUTPUT window displays the resulting output. You can look it over in this window and decide if it is adequate to your needs, or whether modifications need to be made to the program provided to the PROGRAM EDITOR and resubmitted. Each window has a command line on which the command may be typed. As an option, the function keys are programmed to send the same commands. Other special-purpose windows are also available but will not be discussed in this paper.

Table 1.--SAS Manager Windows

```
OUTPUT
 Command ===>
LOG
 Command ===>

 NOTE : Copyright(c) 1985 SAS Institute Inc., Cary, N.C.
        27511, U.S.A.
 NOTE : SAS (r) Proprietary Software Release 6.02 Licensed
        to SAS Institute Inc.
PROGRAM EDITOR
 Command ===>

 00001
 00002
 00003
 00004
 00005
```

Statements, which are inserted into the PROGRAM EDITOR, have their own unique structure that an operator must use. For example, every statement must end with a semicolon (see Table 2). The basic structure is quite simple and easy to learn; however, the PC SAS System offers a lot of possibilities which require increasing complexities. While easy things can be done rather simply, other complex demands can require much sophistication

from the operator. There seems no end to what one can learn before mastery over PC SAS is achieved.

Table 2.--Sample Data Set

```
PROGRAM EDITOR
 Command ===>



 00001  data sales;
 00002    input salesrep $ sales region $ machine $;
 00003    cards;
```

PC SAS works with data. Data may be put directly into PROGRAM EDITOR or pulled into it from some remote source by means of a command. A common remote source is a floppy diskette placed in the A> drive. The PROGRAM EDITOR can be instructed to bring in a file with the "include" command (see Table 3) which brings in the text seen in Table 4 as a SAS statement or a series of statements. Actually, you can create the major part of the program on a file that is stored on a floppy diskette and call it into the PROGRAM EDITOR by the "include" command. PC SAS also has the capability of drawing data from several outside sources, including a mainframe computer, dBase II, dBase III, VisiCalc, and Lotus 1-2-3 files.

Table 3.--Command to Bring in a Remote File

```
PROGRAM EDITOR
 Command ===>  INCLUDE 'A: Provo.SAS'


 00001
 00002
 00003
 00004
 00005
```

Table 4.--File Brought in by an Include Command

```
PROGRAM EDITOR
 Command ===>

 00001 DATA PROVO;
 00002   INPUT AUTHOR $ CIRC;
 00003   CARDS;
 00004 SMITH       20
 00005 MARCHANT    35
 00006 RUN;
 00007 PROC SORT;
 00008   BY AUTHOR
 00009 RUN;
 00010 PROC PRINT;
 00011   SUM CIRC;
 00012 RUN;
 00013
 00014
 00015
 00016
 00017
 00018
 00019
 00020
```

BASE, STAT AND AF OPTIONS

Base provides tools for (1) information storage and retrieval, (2) data modification and programming, (3) report writing, (4) statistical analysis, and (5) file handling. Since this presentation is intended to deal particularly with

statistics, we will limit our comments here to the statistical analysis component. That part of the Base is not very extensive. It covers frequencies, crosstabulations, means, and correlations (see Table 5).

Table 5.--SAS Help Menu

IAF

Command ===>

S A S P R O C E D U R E M E N U S Y S T E M

BASE	Utilities	SAS/STAT
1 CALENDAR	21 APPEND	41 ANOVA
2 CHART	22 COMPARE	42 CANCORR
3 CORR	23 CONTENTS	43 CATMOD
4 FORMS	24 COPY	44 DISCRIM
5 FREQ	25 DATASETS	45 FACTOR
6 MEANS	26 DBF	46 FREQ
7 PLOT	27 DIF	47 GLM
8 PRINT	28 FORMAT	48 NPAR1WAY
9 RANK	29 SORT	49 ORTHOREG
10 STANDARD		50 REG
11 SUMMARY	Remote Link	51 SCORE
12 TABULATE	31 DOWNLOAD	52 TTEST
13 TIMEPLOT	32 UPLOAD	
14 TRANSPOSE	33 SIGNON	
15 UNIVARIATE	34 SIGNOFF	

Anything more complex should be sought in the STAT component, which is really quite rich. Procedures include (1) regression analysis, (2) analysis of variance (including T-test), (3) categorical data, (4) multivariate (including factor) analysis, (5) discriminant analysis, (6) scoring, and (7) four types of estimable functions.

Going through the PROGRAM EDITOR to insert a program is one procedure. Doing it that way requires knowing the SAS language.

Each statistical procedure also can be structured by use of a menu-driven form in the AF window that can be brought up rather simply. Using the AF window, the operator simply fills in a form on the screen, specific to that procedure, with appropriate choices, and the SAS statements are structured for you (see Table 6). Using an AF window saves the user from making language errors and, to a degree, limits the need to learn aspects of the SAS command language. We view that attribute as a big convenience for any researcher. However, you must know your statistical procedure and the possible options in order to make the best use of it.

The system also provides lots of help (see Table 7). By typing in the number of an item from the help menu a user receives online help, thus saving time looking up a procedure in one of the printed manuals. For example, typing the number 42 on the command line in the help window and hitting the return key would give online help for the Analysis of Variance procedure. If you choose to run an Analysis of Variance procedure, your output would appear in the output window and the format would appear as in Table 8.

EVALUATION OF PC SAS

PC SAS seems to us to be one of three major statistical packages available for use on personal computers. The others are SPSS/PC+ and SYSTAT, both of which are more highly rated by InfoWorld because, according to the editors, these packages are faster and have better documentation. All three are, however,

very comprehensive and include the major statistical analyses with a variety of options. Their statistical computations appear to be accurate, and provide tables that are in good form and reasonably easy to interpret if the reader understands the statistical procedure. (Parenthetically, SYSTAT distributes a freeware program called MYSTAT for educational users. MYSTAT does simple statistics including PLOT, STATS, TABULATE, HISTOGRAM, PEARSON, WILCOXON, AND TTEST. It does not include recode; file handling such as match, merge, or append; repeated measures; stepwise regression; canonical correlation; MANOVA; MANCOVA; cluster analysis; and some others. Interested readers can obtain a copy of MYSTAT by sending a PC DOS formatted diskette to one of us at the BYU Library School.)

User support for the three systems is considered good. However, for the PC SAS system it is different than either SPSS/PC+ or SYSTAT. If you use PC SAS under a site license, you cannot personally call the SAS Institute for help. You have instead, an on-site consultant, and he or she has to answer the question or call SAS. This policy is strictly enforced. If your question cannot be answered by your representative, or your representative is busy, sick, or fired you'll have trouble getting your question answered. Incidently, the quality of the SAS documentation is poor enough that you will have questions.

The PC SAS program is not copy-protected, but it is encoded to quit working when the license expires. You can even use copies at home without counting against your site license. All

copies stop working, however, on the due date of the license, just like the original.

PC SAS's niche is easy to determine. It is aimed at sites that use mainframe SAS and have many users. The product is priced to discourage small installations. Your cost would be approximately $270 for BASE and STAT for the first year and $180 a year thereafter for ten users. For fifty users, however, the cost per user drops to $90 the first year and $60 annually thereafter, including updates and fixes (see cost figures near the end of this article).

To its fans, mainframe SAS's appeal is in its ability to juggle massive amounts of data. Presumably, PC SAS appeals to those who wish to perform data entry and program debugging without tying up the mainframe, which can be costly. But the user-support policy and the poor manuals will not encourage the mainframe user to switch to the personal computer system.

To make their program more useful, SAS Institute needs to rewrite the SAS Language Guide and SAS/STAT Guide completely, using SPSS/PC+'s manuals as a guide. They could also upgrade their package to take advantage of the more powerful 80386 microprocessor-based personal computer's expanded capacity and speed to handle large data sets on its own. Then, for many users, PC SAS would be more than a conduit to a mainframe. With that upgrade, PC SAS would be incomparable as a data handler and general statistics package.

PC SAS currently, however, is slow compared to what we have come to expect from the mainframe computer. When we loaded a

program on PC SAS that had 464 observations and 64 variables it took five minutes. To run a simple print procedure on this data set took nearly 16 minutes. An editor of InfoWorld has stated that in its present form PC SAS is too slow to appeal as a stand-alone product. Conversely, the long-time SPSS consultant at Brigham Young University (BYU), who is also the person responsible for the PC SAS site license at BYU, prefers PC SAS because of simpler commands, on- and off-site training programs, video cassette training, and computer based training.

DOCUMENTATION

Considerable documentation comes with the PC SAS license. The package not only comes with the disks, it also includes a computer tape for the mainframe to allow smooth micro-to-mainframe communication, a PC SAS demonstration disk, a professionally produced VHS videotape explaining how PC SAS augments mainframe SAS, copies of the quarterly SAS Communications magazine, brochures on SAS user groups and SAS Institute training seminars, usage notes and fixes for program bugs, and four 8 1/2-by-11 inch manuals.

The first of the four manuals, the SAS Introductory Guide, leads you through the screen window program in a clear, well-organized manner. The second manual, the PC SAS Language Guide, is a 430-page tome that covers all the ways you can build, modify, and maintain SAS data sets. It gives you a more formal and complete description of the Display Manager, but it is not in the clear, tutorial style of the SAS Introductory Guide. We think the Language Guide should be expanded and rewritten in a more

tutorial style with examples. The third manual, the SAS Procedures Guide, explains how to do simple graphs on the printer, calculate descriptive statistics, and create tables of your data. This manual is better written, with sufficient examples to be quite helpful.

The fourth manual, the SAS/STAT Guide, is difficult for the novice. It covers the complex inferential statistics in the package and assumes the user has an advanced knowledge of statistics and SAS statistical terminology. Few explanations are provided for the analysis options, but the reader is referred to a list of statistical texts or journal articles at the end of each chapter.

CONCLUSION

PC SAS is, in our opinion, one of three, top quality statistical software packages for the IBM PC and compatibles. It has the capacity to handle large data files and to produce acceptable analyses of the data. However, because it currently is only available by site licensing, its appeal seems to be limited to universities and large public libraries.

Table 6.--AF Screen for Regression

```
IAF
 Command ===>
                                        Use Scroll commands for more.
    PROC REG DATA=_____________  OUTEST  =_______________

       _ NOPRINT   _ ALL          OUTSSCP =_______________
       _ SIMPLE    _ USSCP
       _ COVOUT    _ CORR         SINGULAR=________

    MODEL ____________________________________

  Model selection options are dependent on method chosen
    for analysis.

  METHOD = NONE  or _ FORWARD or _ BACKWARD or _ STEPWISE
                 or _ MAXR    or _ MINR     or _ RSQUARE

  INCLUDE= _____       SELENTRY= _____       START= _____
  SELECT = _____       SLSTAY  = _____       STOP = _____

 FORWARD, BACKWARD   RSQUARE method options
 or STEPWISE method  _ ADJRSQ _ B     _ JP   _ PC   _ SP
 option:  _ DETAILS  _ AIC    _ CP    _ MSE  _ SBC  _ SSE
                     _ BIC    _ GMSEP _ RMSE _ SIGMA=______


                                   Use Scroll commands for more.
 O  General  Regression    Details on the  Predicted values
 P           calculations  estimates       residuals
 T  _NOPRINT _ XPX         _ SS1 _ COVB    _ P  _ CLM
 I  _NOINT   _ I           _ SS2 _ CORRB   _ R  _ CLI
 O  _ALL                   _ STB _ VIF     _ DW _ PARTIAL
 N                         _ TOL _ COLLIN  _ INFLUENCE
 S                         _ COLLINOINT


    VAR      ____________________________________________;

    FREQ     _________; WEIGHT _______; ID _______;

    OUTPUT   OUT= ____________________
             ____________________________;   keyword=variable

       TEST  _______________ /  _ PRINT ;

     _ MTEST _______________ /  _ PRINT _ CANPRINT _ DETAILS


  BY   ____________________________________________;
```

Table 7.--SAS Help Menu

```
IHELP
 Command ===>

              S A S   S Y S T E M   H E L P

      Basic                 Utilities             SAS/STAT
      1 CALENDAR            21 APPEND             41 ANOVA
 P    2 CHART               22 COMPARE            42 CANCORR
 R    3 CORR                23 CONTENTS           43 CATMOD
 0    4 FORMS               24 COPY               44 DISCRIM
 C    5 FREQ                25 DATASETS           45 FACTOR
 E    6 MEANS               26 DBF                46 FREQ
 D    7 PLOT                27 DIF                47 GLM
 U    8 PRINT               28 FORMAT             48 NPAR1WAY
 R    9 RANK                29 SORT               49 ORTHOREG
 E   10 STANDARD                                  50 REG
 S   11 SUMMARY             Remote Link           51 SCORE
     12 TABULATE            31 DOWNLOAD           52 TTEST
     13 TIMEPLOT            32 UPLOAD
     14 TRANSPOSE           33 SIGNON
     15 UNIVARIATE          34 SIGNOFF

                      Use the PgDn key for more selections.


                    W I N D O W   H E L P

     70 DISPLAY MANAGER              77 LOG Window
     71 AF Window                    78 NOTEPAD Window
     72 DIR Window                   79 OPTIONS Window
     73 FILENAME  Window             80 OUTPUT Window
     74 FOOTNOTE Window              81 PGM EDIT Window
     75 KEYS Window                  82 TITLE Window
     76 LIBNAME Window               83 VAR Window

                    O T H E R   H E L P

     90 Introduction to the DATA STEP
     91 SAS Formats and Informats
     92 SAS Functions
     93 SAS Statements used anywhere
     94 Procedure Descriptions
     95 License Information
```

Table 8.--Sample Output for Analysis of Variance

OUTPUT

```
Command ===>

Model: MODEL1
Dep Variable: OXY

                    Analysis of Variance

                     Sum of          Mean
Source      DF      Squares        Square     F Value    Prob>F

Model        3    656.27095     218.75698      30.272    0.0001
Error       27    195.11060       7.22632
C Total     30    851.38154

    Root MSE       2.68818    R-Square        0.7708
    Dep Mean      47.37581    Adj R-Sq        0.7454
    C.V.           5.67416

                  Parameter Estimates

                          Parameter          Standard
Variable      DF           Estimate             Error

INTERCEP       1       93.126150076        7.55915630
RUNTIME        1       -3.140386569        0.36737984
AGE            1       -.1738767891        0.09954587
WEIGHT         1       -.0544365155        0.06180913

                        T for HO:
Variable      DF      Parameter=0        Prob > |T|

INTERCEP       1            12.320            0.0001
RUNTIME        1            -8.548            0.0001
AGE            1            -1.747            0.0921
WEIGHT         1            -0.881            0.3862
```

CURRENT COSTS FOR PC SAS, SPSS/PC+ AND SYSTAT

PC SAS

PC SAS is available by license agreement only.

Program Product	Number of Workstations Licensed	Fee Per Product First Year/Renewal
Base SAS, or SAS/GRAPH	Up to 10	$ 1500/1000
	11- 50	2000/1300
	51-200	2250/1500
	210-500	2500/1700
SAS/STAT	Up to 10	$ 1200/800
	11- 50	1600/1000
	51-200	1800/1200
	201-500	2000/1300
SAS/AF	Up to 10	$ 900/600
	11- 50	1200/800
	51-200	1350/900
	201-500	1500/1000

For more information contact SAS Institute Inc., Box 8000, SAS Circle, Cary NC 27511; (919) 467-8000

SPSS/PC+

	Cost to Educational Units	Cost to Libraries
BASE	$695	$795
ADVANCED	$295	$395
TABLES	$295	$395
GRAPHICS	$395	$395
DATA ENTRY 2	$395	$395

Discounts
BASE + 1 option =15 percent
BASE + 2 options=20 percent
BASE + 3 options=24 percent

License for educational and non-profit institutions = $1900 for a network version

Hardware requirements
IBM PC/XT/AT or compatible
10 Mb hard disk
448K
Math co-processor recommended

Claims to be 3 times faster than PC SAS

VALUE PLUS--$395 per year maintenance agreement includes features as follows:

- A complete set of SPSS/PC+ base system software with no copy protection and no need for a key diskette to run SPSS/PC+
- Future upgrades free as long as subscription is in force
- Discounts
  25 percent on options. Limit one of each option per subscription.
- Newsletters, round table discussions, and previews of new products

For more information contact SPSS Inc., 444 N. Michigan Ave., Chicago, IL 60611; (312) 329-3500

SYSTAT

Site License = $3000 for unlimited number of stations. Operations manuals are extra and cost $50, or $40 in quantities of 10 or more.

SYSTAT is also sold individually.

	Cost to Educational Units	Cost to Libraries
1 Package	$595	$595
2 - 5 Packages	$500	$550
6 - 10 Packages	$450	$500
11 - 15 Packages	$400	$450
>16 Packages		$400
>50	$350	

Runs on IBM PCs and compatibles using either PC DOS or MS DOS

For more information contact SYSTAT Inc., 2902 Central Street, Evanston, IL 60201; (312) 864-5670.

TIME MANAGEMENT IN ACADEMIC LIBRARIES

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Abstract

The purpose of the study was to generate and analyze survey data that would provide insights useful in evaluating time management practices in academic libraries. The population that was surveyed consisted of 105 directors who manage libraries that are members of the Assocation of Research Libraries (ARL), and 89 libraries that are not ARL members but which are listed in the "University Library Statistics" of Assocation of College and Research Libraries as being among the largest non-ARL libraries located in Ph.D. granting institutions. Of the 194 directors surveyed, 82 percent of them responded -- since so many responded, we were dealing with a population as opposed to a sample.

Four primary objectives of the research were designed to determine (1) to what degree library managers were aware of and practice efficient time management methods, including delegation of authority and leadership style, (2) how time management practices related to leadership style, sex of manager, number of people managed, and years of experience as library director, (3) the most serious time wasters in library management, and (4) how library directors reportedly spent their time on specified categories. The directors were asked to give the percent of time spent in the following areas: planning, reporting, supervising, budgeting,, personnel work, meetings with university administrators, meetings with library administrators, library committees, university committees, and external fund raising.

Several analyses were calculated for the data including frequency, correlation, chi-square, and factor analysis. The results of the data analysis and their interpretation provided a basis for : evaluating the training of library managers, determining the need for additional research in the field, an opportunity for academic library directors to compare their own responses to those of others in similar positions, and for prospective directors to see how existing management allocates time.

MANAGEMENT OF TIME BY DIRECTORS OF LARGE ACADEMIC LIBRARIES

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Unquestionably, one of the most precious resources of library managers is time. It cannot be physically stopped, compressed, expanded, or reordered. No one can quick-freeze time like a misguided seeker of a cryogenic eternity. Newton described time as absolute, flowing without reference to anything else. Thomas Carlyle advanced the same idea more poetically: "The great mystery of time, were there no other; the illimitable, silent, never-resting thing called time, rolling, rushing on, swift, silent, like an all-embracing tide." Large academic institutions pose a problematic environment in which library directors must prevail. Recent changing landscapes of the higher education environment add considerable pressures to the life of the library director. At many universities there is greater emphasis on doing more with less. New services are being introduced concurrently with reductions in personnel budgets. Library directors are expected to do more (e.g., engage in external fund raising) with the same number of hours in their work days. All of these time

parameters lead to one road: increasing productivity through more efficient time management.

Business literature contains a large amount of research on time management. Within this literature is a significant agreement on what techniques constitute effective management of time. Agreement also exists on what activities can be described as the greatest "time wasters." Norman Hill describes management as, "a series of interruptions interrupted by other interruptions." He also observed:

> "Managers perform a great number of tasks in a typical day, some of which are planned, while others are not. However, finding enough time to do all the routine things that must be done in addition to putting out the daily "fires" that invariably start can be both difficult and demanding. Managers can come to feel that they must work twice as fast in order to just stand still. They may come to feel that they will never be completely "on top of things." (1)

Academic library managers surely have experienced these feelings. Lakein reports that most managers feel that they never have enough time to get everything done. (2) Yet everyone has the same amount of time (8,760 hours a year). It is not that some people have "more" time than others; it is that they know how to manage their time better through practices of efficient management. Managers set a standard for other employees in the library to follow. Merrill and Donna Douglas found the average American worker wasted 45 percent of the work day; unconsciously or not, when a worker wasted time, it was "time theft" pure and simple. (3) Efficient time management is not only important for managers in getting their own work done, but it also has an effect on those who look to them as role models.

The authors of this article have a keen interest in time management, and expressed this interest by applying for a librarian/scholar grant from the Council on Library Resources in 1985; the grant was awarded and the project was completed in 1986.

GOALS AND OBJECTIVES

Three goals were identified for the study; they were as follows:

1. The primary goal or purpose of the study was to collect data related to time management practices and attitudes of directors in large academic libraries.

2. The second goal was to analyze and interpret the data in order to provide recommendations for further consideration by library directors and to provide a basis for in-service training of personnel.

3. The final goal was to report the results to both the participants in the study and to library and other media professionals.

Four objectives of the study were designed to determine:

1. To what degree library managers were aware of and practice efficient time management methods, including delegation of authority and leadership style.

2. Time management practices as related to:

   A. Leadership style.

   B. Sex of manager.

   C. Number of people managed.

   D. Years of experience as a library director.

3. Identification of the most serious time wasters in library management.

4. How library managers reportedly spent their time based on 12 specified categories.

METHODS AND PROCEDURES

The overall plan of the study involved the development and use of a mailed questionnaire dealing with time management. The population that was surveyed consisted of 105 directors who manage libraries holding membership in the Association of Research Libraries (ARL), and 89 libraries that are not ARL members but which are listed in the "University Library Statistics" published by the Association of College and Research Libraries (ACRL); these 89 libraries are among the largest non-ARL libraries located in Ph.D. granting institutions. Libraries with an acting director (with less than six months in office) were not included in the study.

The total population of academic library directors came to 194. A 60 percent return was considered desirable for a reliable sample. To ensure an adequate return of the survey instrument, two mailings were planned and executed. The final number of questionnaires returned was 159. Since the entire population of directors of large university libraries were polled, and 82 percent of them responded, for all practical purposes it can be assumed that a population, not merely a sample, was being addressed. For this reason, there is no question of sampling error.

Data Collection

Items used to collect the data in the mailed survey were based on the time management literature. The survey form (see Appendix) contained five sections. Section I of the survey instrument dealt with a profile of the respondents. Using a four point interval scale, except for the items which

involved gender identification, it collected data about the library directors who returned the survey in areas pertaining to the size of library and number of years spent as a library director/administrator.

Section II specifically asked for number of hours spent per week in administrative activities. A six-point interval scale was used to determine number of hours respondents spent per typical week in each respective administrative area. In addition, a four-point interval scale was used in this section to determine the number of days spent per year off campus attending professional meetings or other work related events.

Section III covered the principle of delegation of authority. The ability to delegate work is frequently mentioned in the literature on leadership as a key element in managing time effectively. Merrill and Donna Douglass observed that in spite of the obvious benefits and good sense that delegation makes, many managers are ineffective delegators. The Douglasses devised a self quiz to help an individual determine the quality of one's delegation skills. (4) Eleven of the 16 items in the Douglasses' questionnaire were used in this section. Rather than the "yes"/"no" response that was useful in the Douglass self-evaluation instrument, a four-point Likert type scale was devised which used the following descriptors to respond to the statements: Agree strongly (AS), Agree moderately (A), Disagree moderately (D), and Disagree strongly (DS).

Section IV of the survey instrument was on time wasters. There is substantial agreement in the business literature on the subject of what wastes a manager's time. LeBoeuf's 15 items, based on the work of time expert MacKenzie, were used in this section of the library survey. (5) In the LeBoeuf study, sales representatives and engineering managers in 14

countries were asked to rank their top 10 time wasters from a list of 15. For purposes of this academic library survey, library managers were asked to do the same. The reason for collecting this data was to determine whether library managers had the same perspective of what wastes time as either sales representatives or engineering managers. Fifty percent of the mailed surveys were constructed such that the order of the items in this section were reversed to avoid respondent proclivity to select those items at the top of the list.

Section V, the last section of the survey, dealt with leadership. One way to discuss an individual's leadership style is to determine whether a person is primarily concerned with getting the work done (i.e., a task leader); or primarily concerned with looking after people and their feelings (i.e., a process leader). Douglas McGregor is known for his classic work on leadership style which described these two sets of contrasting leadership behaviors as "Theory X" and "Theory Y." (6) Robert Blake and Jane Mouton integrated the research of McGregor and other industrial psychologists into an easily understood tool for analyzing leadership style along the task-process continuum which they called the "Managerial Grid." (7) The four corners of the grid square represent four leadership positions:

A. A primary concern for people.

B. A primary concern for task.

C. A lack of concern for either task or people (the least desirable position on the grid for effective management).

D. A high concern for both task and people (the most productive type of leadership style).

The most effective leader is one who can combine both task and people skills for the good of the organization. For this reason, then, it was important to collect data on library managers' leadership styles. To do this a short form of the longer original questionnaire by Blake and Mouton was used. This five item instrument ranks five statements based on how a manager handles conflict. Respondents to the library survey were placed on the managerial grid according to how the majority rank ordered these statements.

A pretest of the survey instrument was carried out using n=12. Based on the 12 responses, the only change that was made in the survey instrument following this pretest was to more clearly explain how the leadership section of the survey fit in with a study on time management.

ANALYSES AND RESULTS

The SPSS statistical package was used to analyze the data collected in the time management survey of academic library directors. Five analyses were calculated for the data. The first was frequency analysis which tabulated how many responses were in any one given category. The results, which are presented later, are in terms of percentiles. Second, the Pearson product-moment correlation was calculated across all the variables in the study. The third analysis performed on the data was crosstabs, using chi-square, a subprogram available in SPSS. Chi-square tests for independence among variables. In this study it was used to determine if respondent characteristics in section I and the varibles in sections II and III of the survey instrument were associated.

Library director rankings of time wasters were compared to those of sales personnel and engineering managers in the LeBoeuf study (using rank

correlation). Also, factor analysis was run on all items in the questionnaire to provide information on which items belonged together according to their underlying correlations.

Frequency Analysis (Results)

Section I of the survey instrument dealt with a profile of the library directors returning the questionnaire. Characteristics of the population included: almost 90% administered staffs of 300 or less, with nearly 58% administering staffs of 150 or less. The largest percentage of directors (46.5%) had been in their current position five years or less; 38% had been a library director less than five years--however, nearly 28% had 16 years or more experience. A large number (56%) had served as a library administrator, such as a department head or assistant/associate director prior to becoming head of a large university library. Only 6% had five years experience or less, which would tend to confirm that the path to top management positions in large university libraries lies through increasing responsibility in leadership roles. Most of the respondents to the survey (48%) fell into the 46-55 age category, with virtually none under age 35. Twenty-one percent were female; a larger percentage than had been anticipated. Although there are more women in top university library management positions than in the past, their numbers continue to remain small.

Section II of the survey addressed the number of hours per week that library directors normally spent in the traditional areas of management. Those areas where the greatest number of respondents spent the least amount of time (i.e., three hours a week or less) were external fund raising (69%), university committees (67.5%), library committees (63%), and supervision (57%). In the four to seven hour category only one area was indicated by 55%

of the library directors, and that area was meetings with library administrators. This area was followed closely by planning (46%) and reporting (48%). In examining the 8-11 hours per week category, the largest number of library directors reported in the areas of meeting with other library administrators (30%), reporting (23%), and planning (22%). Some other trends that appear in the data are that 88.3 percent of the library directors spent seven hours or less doing budgeting. In the past, budgeting was one of the major time consuming activities of academic library directors, the impact of automation and the hiring of specialized budgeting personnel is reflected in these figures. A complete breakdown of time spent by directors per area is given in the table below:

TABLE 1

PERCENT OF TIME SPENT ON MANAGEMENT ACTIVITIES

Hours per week:	0-3	4-7	8-11	12-15	16-19	20+
Planning	18.2	46.1	22.1	11.7	1.3	.6
Reporting (internal & external communications)	18.5	48.4	22.9	7.6	2.5	0
Supervising	56.8	30.4	10.1	1.4	.7	.7
Budgeting	44.8	43.5	9.1	2.6	0	0
Personnel work (including collective bargaining, labor relations)	42.2	38.3	14.3	3.9	1.3	0
Meetings with university administrators	49	13.9	5.1	1.9	0	0
Meetings with library administrators	3.9	55.5	30.3	8.4	.6	1.3

Library committees	63	30.5	3.9	2.6	0	0
University committees	67.5	27.4	3.8	.6	.6	0
External fund raising	69.1	24.2	4.7	1.3	.7	0

Number of days per year off campus for professional meetings or work related events	0-10	1-20	21-30	30+
Percent	4.5	41.3	33.5	20.6

In section III of the survey instrument, library directors were instructed to indicate their agreement or disagreement with a series of statements regarding their willingness to delegate authority--a significant factor in efficient time management. The following table gives the percent of directors responding per area.

TABLE 2

DELEGATION OF AUTHORITY

	Agree Strongly	Agree	Disagree	Disagree Strongly
1. I frequently allow my staff to make mistakes.	13.8	49.7	29.6	6.9
2. My staff make most of the day-to-day decisions about their work without my prior approval	60.1	38	1.3	.6
3. I frequently do tasks that my subordinates should be doing.	1.3	29.7	43.7	25.3
4. The library does NOT function smoothly when I am absent.	.6	2.5	37.1	59.7

5.	I seldom revise decisions made by my staff.	28.9	59.7	10.7	.6
6.	I give my library staff considerable authority over work (e.g., personnel, finances, facilities and resources).	44	50.9	5	0
7.	I frequently make decisions that are part of my subordinates' jobs.	0	9.5	55.1	35.4
8.	I delegate most library operations to my staff.	42.1	51.6	5.7	.6
9.	If I were incapacitated for six months, there is someone on my staff who could readily take over my job for that period of time.	44.9	41.8	10.1	3.2
10.	The department heads under my leadership do NOT delegate work well to their own subordinates.	1.3	9.2	64.7	24.8
11.	My key people take the initiative for projects without waiting for me to think of them.	26.1	59.2	14.0	.6

In the above table, statements numbered 1, 2, 5, 6, 8, 9 and 11 are positively worded. Negatively worded statements are numbers 3, 4, 7 and 10. An administrator who is an effective delegator would agree with positively worded statements and disagree with negatively worded items. A large percent of the library directors (85-90%) indicated the appropriate AGREE/DISAGREE response for effective delegation of authority on all items but two (numbers 1 and 3).

Identifying the top 10 time wasters was the purpose of collecting data is Section IV. The results were then compared to rankings made by sales representatives and engineering managers in a prior study by LeBoeuf. (8) The rankings for each occupational group appear in Table 3. Number one is ranked as the item which hindered the respondents the most in getting work completed on time, and number ten as the item which hindered them the least.

TABLE 3

TOP TEN TIME WASTERS RANKED BY THREE OCCUPATIONAL GROUPS

	Library Manager	Sales Reps	Engineering Managers
Attempting too much at once and estimating time unrealistically	1	8	---
Cluttered desk and personal disorganization	2	---	---
Confused responsibility and authority	---	---	---
Crises (personal and/or staff)	5	4	6
Drop-in visitors	6	2	9
Inability to say no	---	---	---
Inadequate, inaccurate, or delayed information	7	---	1
Indecision and procrastination	---	7	8
Ineffective delegation and involvement in routine and detail	9	---	2
Lack of objectives, priorities and deadlines	---	6	---
Lack of, or unclear, communications or instructions	4	10	5

Lack of self-discipline	10	3	10
Leaving tasks unfinished	---	9	7
Meetings (scheduled and unscheduled)	3	5	4
Telephone interruptions	8	1	3

It is interesting to note the differences in the time wasters among the three groups. Library managers ranked as number one, attempting too much at once and estimating time unrealistically, followed by a cluttered desk and personal disorganization, and meetings as third. Meetings were listed by all three groups in the top half of those activities which wasted their time the most. All three groups omitted confused responsibility and authority, and inability to say no from their rankings.

Section V of the survey provided data about the type of leadership style of the respondents based on how they dealt with conflict. Although a task leader may get more out of subordinates, in time revenge psychology sets in, and the creative thinking necessary in today's organization is lost. On the contrary, a manager who is people oriented at the expense of the task will have a less productive staff. The university library managers surveyed were asked in this section to rank five statements from one to five with one being the least typical and five being the most typical. Table 4 reveals how the population in the study ranked these statements based on a numerical position found on the managerial grid -- indicated in parentheses.

TABLE 4

LEADERSHIP STYLE

Rank	Conflict Statement
5	When conflict arises, I try to identify reasons for it and seek to resolve underlying causes. (9,9)
4	When conflict arises, I try to find a compromise that everyone will be satisfied with. (5,5)
3	When conflict arises, I try to remain neutral. (1,1)
2	I avoid causing conflict, but when it does appear, I try to smooth things over so everyone will be happy. (1,9)
1	When conflict arises, I try to cut it off or win my position. (9,1)

Blake and Mouton matched the most typical statement with a position on the managerial grid, reflecting leadership style indicated by numbers. (9)

9,9 Team Management. "Work accomplishment is from committed people; interdependence through a 'common stake' in organization purpose leads to relationships of trust and respect."

5,5 Organization Man Management. "Adequate organization performance is possible through balancing the necessity to get out work with maintaining morale of people at a satisfactory level."

1,1 Impoverished Management. "Exertion of minimum effort to get required work done is appropriate to sustain organization membership."

1,9 People-Centered Management. "Thoughtful attention to needs of people for satisfying relationships leads to a comfortable, friendly organization atmosphere and work tempo."

9,1 Authority-Obedience. "Efficiency in operations results from arranging conditions of work in such a way that human elements interfere to a minimum degree."

Most of the university library administrators surveyed selected a team management approach as their most typical response. This ranking was followed in order by a middle position which, although satisfactory, has also been characterized as a country club style of leadership -- task oriented in the morning and process oriented in the afternoon. The third ranked selection was one in which the manager shows little interest in either people or task, followed by democratic or people oriented management with an authoritarian style being the lowest ranked among the greatest number of those who responded to the survey.

Results: Correlation

Pearson product-moment correlations were run for all variables in the study. Positive correlations were found between number of years as library director and age, between number of hours spent with university committees and hours spent with library committees, and between delegation and the need to seldom revise decisions made by staff.

Results: Cross-Tabulation with Chi-Square

In this study cross-tabulation was used with chi-square to find existence of significant associations among the respondent characteristics and the variables reflected by the data collected in Sections II and III of the survey instrument. Significant associations were found between the following variables:

-- The number of years as a library administrator and the statement, "The department heads under my leadership do NOT delegate work well to their

own subordinates." Those who responded in the "disagree" columns were more frequently library directors with fewer years of administrative experience.

-- The older the director, the more days s/he spent off campus attending professional meetings or work related events.

-- Gender was a factor in the number of hours spent on library committees. Women spend more time in committee work than men.

INTERPRETATION OF THE DATA AND RECOMMENDATIONS

Directors of large academic libraries were found to lean toward a team leadership style of management. One of their most obvious problems is the amount of time spent in committee work. The directors perceived committees as a problem, having ranked this area as their third highest time waster. The problem of too many library committees requires serious examination. Perhaps better structuring of library committees will help alleviate the time wasting issue noted in the survey.

Age and experience were factors in the library directors' attitude toward the delegation of authority. Older managers (i.e., age 56 or more) were more likely to do tasks that their subordinates should be doing than younger directors. Delegation is a must management practice for directors at this level of responsibility. They have to recognize the inescapable fact that they cannot do everything.

The directors acknowledged that they are attempting to do too much at once and estimating time unrealistically. These are problems that can and should be addressed for more effective use of time. Attempting too much is a characteristic of a "workaholic." Many individuals who become library directors at major universities are workaholics and some may take pride in

this admission. Nevertheless, it is better to work smarter than harder. Establishing a list of priorities and then concentrating only on the top items is one way of managing one's time. It is a prudent practice to say no to those requests which do not fit in with one's top-ranked goals. Maintaining a time log is another way to control one's time.

As the survey indicated, the respondents can be described as essentially team leaders. The team leadership approach was their first choice when dealing with conflict. Leadership over human beings is exercised when motives and purposes mobilize institutional, political, psychological and other resources so as to arouse, engage and satisfy the motives of followers. (10)

CONCLUSIONS

The academic library directors who responded to this study were experienced and mature individuals who are knowledgeable about appropriate delegation skills and for the most part are team-management oriented in their leadership styles. They have some significant time wasting issues that need special attention. The amount of time spent in committee work also requires an assessment. As organizational structures continue to evolve, new ways of dealing with decision making and work flow, other than the committee, must be developed for greater productivity while not falling back on an outmoded authoritarian leadership style.

Directors of these large university libraries need to be leaders, not just good managers. They must inspire, build confidence in, and empower their staff. Further, they must pay close attention to managing themselves; the use of their time is vital to their effectiveness. Bennis believes that leaders have to look inward as well as outward:

"If a leader is not careful, he will be sucked into spending all his time on the important but stifling and inevitably mundane tasks of organizational maintenance. Leadership is the capacity to infuse new values and goals into the organization, to provide perspective on events and environments which, if unnoticed, can impose constraints on the institution... Administration is managing given resources efficiently for a given mission. Leaders question the mission. Once the leader gets sucked into the incredibly strong undertow of routine work, he is no longer leading, he is following, which he is not paid to do." (11)

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APPENDIX

ACADEMIC LIBRARY SURVEY

There are five sections to this survey. Please answer each one following the directions that are given. Use either a pen or a pencil. Please do not leave unanswered items or sections.

We appreciate your cooperation, and the information which you provide will make a significant contribution to our knowledge about how directors of large academic libraries make use of their time.

SECTION I

Directions: Please indicate by check mark the choice which best describes you.

The size of your full-time equivalent library staff (exclude student assistants):

1-150 _____ 151-300 _____ 301-450 _____ 451+ _____

The number of years you have been in your current position:

1-5 _____ 6-10 _____ 11-15 _____ 16+ _____

The number of years you have been a library director:

1-5 _____ 6-10 _____ 11-15 _____ 16+ _____

The number of years you have served as a library administrator (include experiences as department head and assistant/associate director):

1-5 _____ 6-10 _____ 11-15 _____ 16+ _____

Your age category:

25-35 _____ 36-45 _____ 46-55 _____ 56+ _____

Gender:

Female _____ Male _____

SECTION II

Directions: Please indicate with a check mark how many hours per week you normally spend on each of the following areas:

Hours:	0-3	4-7	8-11	12-15	16-19	20+
Planning	____	____	____	____	____	____
Reporting (internal & external communications	____	____	____	____	____	____
Supervising	____	____	____	____	____	____
Budgeting	____	____	____	____	____	____
Personnel work (including collective bargaining, labor relations)	____	____	____	____	____	____
Meetings with university administrators	____	____	____	____	____	____
Meetings with library administrators (e.g., assistant/associate directors, department heads)	____	____	____	____	____	____
Library committees	____	____	____	____	____	____
University committees	____	____	____	____	____	____
External fund raising	____	____	____	____	____	____

Please indicate with a check mark how many days per year you are normally off campus attending professional meetings or work related events:

0-10 days _____ 1-20 days _____ 21-30 days _____ 31+ _____

SECTION III

Directions: Circle one response per item. For each of the following statements indicate whether you:

AS Agree strongly with the statement

A Agree moderately with the statement

D Disagree moderately with the statement

DS Disagree strongly with the statement

1.	I frequently allow my staff to make mistakes	AS	A	D	DS
2.	My staff make most of the day-to-day decisions about their work without my prior approval.	AS	A	D	DS
3.	I frequently do tasks that my subordinates should be doing.	AS	A	D	DS
4.	The library does NOT function smoothly when I am absent.	AS	A	D	DS
5.	I seldom revise decisions made by my staff.	AS	A	D	DS
6.	I give my library staff considerable authority over their work, (e.g., including personnel, finances, facilities, and resources).	AS	A	D	DS
7.	I frequently make decisions that are part of my subordinates' jobs.	AS	A	D	DS
8.	I delegate most library operations to my staff.	AS	A	D	DS
9.	If I were incapacitated for six months, there is someone on my staff who could readily take over my job for that period of time.	AS	A	D	DS
10.	The department heads under my leadership do NOT delegate work well to their own subordinates.	AS	A	D	DS
11.	My key people take the initiative for projects without waiting for me to think of them.	AS	A	D	DS

SECTION IV

Directions: Below are listed fifteen typical time wasters. As a library manager, please choose and rank TEN (10) of the fifteen items that hinder you the most. Rank as number "1" the item which hinders you the most in getting your work completed on time, down to number "10" as the item which hinders you the least. Five of the items are to be left unranked.

_____ Telephone interruptions

_____ Meetings (scheduled and unscheduled)

_____ Leaving tasks unfinished

_____ Lack of self-discipline

_____ Lack of, or unclear, communication or instructions

_____ Lack of objectives, priorities, and deadlines

_____ Ineffective delegation and involvement in routine and detail

_____ Indecision and procrastination

_____ Inadequate, inaccurate, or delayed information

_____ Inability to say no

_____ Drop-in visitors

_____ Crises (personal and/or staff)

_____ Confused responsibility and authority

_____ Cluttered desk and personal disorganization

_____ Attempting too much at once and estimating time unrealistically

SECTION V

Below are five ways in which you may find yourself dealing with conflict as a library manager. Your answers will provide the study with information about your leadership style. Statistical analysis will determine whether there is a correlation between time management practices and leadership style.

Rank these alternatives to describe your own behavior with your staff. Place a "5" by the alternative which is most typical; and so on all the way to "1" which is the least typical.

_____ A. When conflict arises, I try to remain neutral.

_____ B. I avoid causing conflict, but when it does appear I try to smooth things over so everyone will be happy.

_____ C. When conflict arises, I try to find a compromise that everyone will be satisfied with.

D. When conflict arises, I try to cut it off or win my position.

_____ E. When conflict arises, I try to identify reasons for it and seek to resolve underlying causes.

Comments:

TROUBLESHOOTING THE APPROVAL PLAN: A CASE STUDY FROM THE SUBJECT SPECIALIST'S POINT OF VIEW

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Abstract

This study investigates a rather poorly explored, hence poorly understood domain--the actual performance of an approval plan in a specific academic subject, in this case, mass media studies. Conceiving performance as the interaction of two multiform variables, approval plan coverage of items sought and a subject specialist's ability to select the appropriate profile, the study calculates the following probabilities:

***whether or not the approval plan covers sought after items
***if covered, whether or not the library profile will "capture" those items either as received books or form selections
***if captured, whether or not the library will process the item to become part of the collection.

These results are then analyzed according to a number of item specific traits, subject specialist desiderata, aspects of the vendor/library interaction, and library handling of the approval plan. This information is then shown to be useful in a decision-making system that allows troubleshooting of the approval plan--for example, making changes in the library profile to better suit collection needs, guiding intelligent choices in the manipulation of the approval plan for better performance, and other performance issues.

Today I would like to summarize and discuss a portion of an ongoing study of ASU Libraries' Blackwell North American approval plan in the area of mass media monographic literature.1 I have chosen my title carefully. By selecting the key terms "troubleshooting" and "case study" I am hoping to convey my sense of the intent, tone, and limits of this exercise. Mine is a very individual effort, an attempt to supply one subject specialist with pertinent and relevant information on how an approval plan is working in his area of responsibility at one specific library. Although the methodology is meant to be generalizable to other situations and some of the results are very interesting for all of us concerned with approval plan performance across the board, these results are not viewed, by me at least, as constituting binding, universal truths based upon precise and clear empirical measurement and hypothesis testing. In Maurice Line's sense, the results and implications are local and tentative. Like a mechanic in a service garage, I am troubleshooting the mechanism before me, seeing how it works and if it works. Thus the substantive results of the study will only be of partial interest to you. However, what might be wrong with my car might be wrong with yours as well. What follows is a description of the tools, the diagnoses, and the repair.

Why This Study?

As a subject specialist/reference librarian in mass

communication, I have wanted to do this study for quite some time. As a research assistant at one of the larger communications libraries in the United states and now as the communication subject specialist at ASU, I have had frequent opportunity to ask and be asked: how is the approval plan doing? Among many of us who depend upon approval plans to supply us with a bulk of our materials, it must be a classic question bound to an almost classic response--we don't know. I will not take up valuable time here to detail the literature on approval plans--you may consult my endnotes for a small review2--but suffice it to say that few substantive or methodological studies have been undertaken since the advent of the approval plan in the 50's. A number of studies of vendor performance have been undertaken as well as various methodologies developed to globally assess vendor performance Unfortunately, most of these studies deal with vendor performance in the more clearly defined area of firm and standing orders. Few studies have undertaken the more difficult business of studying the approval plan in its major contemporary version of supplying, wholesale as it were, materials generally wanted by a library.

The study I am going to describe today addresses the performance of one vendor, one library, and one subject bibliographer obtaining highly desirable domestically published monographs in the area of mass media studies. The questions asked and the information obtained were meant to help me in my effort to

understand how the approval plan operates in my subject area, including problems in its operation and the steps I could take to fix these problems and fine tune this essential enterprise.

Diagnostics

I will begin by describing questions about the approval plan I hoped to answer in this study and how I went about obtaining information to answer these questions. I will then move on to a discussion of the results of the study. I will conclude with a discussion of what these findings mean and what I have been doing or intend to do with this information.

For an academic approval plan to work smoothly and effectively, three performers must act their best. First of all, the approval plan must supply or "cover" materials sought after by a library. Secondly, the library must provide the vendor with a list of conditions and attributes of the materials the library wants to receive on approval--the library's shopping list. This list is usually determined by a joint decision making process of a library's collection development officers, subject specialists, and faculty. Once this list is formulated, it becomes the library's "profile" which attempts to "capture" those items covered by the vendor either as a received book or as a slip or form selection for someone at the library to review for purchase. Once captured, it is up to the vendor to send book or form to the library and for the library to respond by purchasing or rejecting

the book or selecting or rejecting the form. Finally, for items covered by the plan and captured by the profile, the last step is cataloging for the collection.

Given this process, three key performance questions suggest themselves. One, of a list of highly desired books that ought to part of a collection and, by agreement with the approval plan vendor should be covered by the plan, how many are actually purchased by the vendor and made available to its customers? Second, of those desired items covered by the plan, how many are successfully captured, as a received book or form selection, by the library's profile? Three, of those items covered by the plan and captured by the profile, how many eventually are successfully cataloged for the collection?

These three questions constitute the major questions of this study. I will attempt to answer them and to provide explanations by using the following methodology.

As many approval plan researchers and savants often remark, of the many difficult things about assessing approval plans is first deciding the substantive evaluative criteria: what is it exactly that we want?

I do not pretend to solve this problem for your library or my library as a whole. As a subject specialist in communication, I

am solely interested in how the approval plan is working in my neck of the woods. What I want is what I want. And if I am doing my job at all correctly what I want ought to resemble what my patrons, the faculty and students of a professional school of journalism and mass communications want.

Now all of this seems to the point and self-evident. However, none of you probably need to be reminded of various ways we librarians have measured and evaluated our collections based upon patron demand. Wilf Lancaster has amply demonstrated the many ways we have conceptualized and measured demand and need and they all seem to boil down to some form of the authoritative list versus use distinction. In the first case we depend upon some type of bibliography compiled by some expert or other type of authority; in the second, we observe or ask users about what they use or want or we track them, unobtrusively, through citation analysis.[3]

Now I must admit that I am a proponent for practical and theoretical reasons of citation analysis as an easy and mostly accurate middle-ground technique to judge potential and actual use. However, in the case of assessing newly published and thus unread or about to be read books, I do not see how citation analysis or use studies can be very helpful. For one thing--and this is major--they put the cart before the horse. Citations and other types of use come after publication--long after in the case

of most monographs. The only recourse, it seems, is to establish some sort of authoritative list.

The authoritative list I have developed for this study is the entire population of domestically published, English language mass media monographs published in 1985 and reviewed in the key reviewing sources recognized by mass communication bibliographers. Many of these reviews were identified by searching the key communication journals in various online databases and then downloaded into a dbase III database file; others were culled from various print sources and entered manually into the dbase III file. Basic bibliographic information was recorded for each of these citations as well as other information relevant to the study--for example, collecting level, book type (monograph, textbook, reference work, etc.), and general subject area.

The number of items in this pool was just over 900. This pool was then randomly sampled to create a set of 300 items which was reduced to 295 items after a closer inspection of the citation revealed five items to be serial titles.

These items were then searched in the BNA fiche, our In Process File, my own personal ordering file, and in the online catalog. This search was conducted at the end of fiscal year 1985--July 1, 1986, that is, after a sufficient length of time to allow BNA to

deliver the 1985 monographs or forms. For this study, I was also determined to record all 1985 ordering activity that could possibly interfere with the study. Fortunately, no one made any special orders.

Items were searched in the BNA fiche to determine whether or not BNA carried the item and whether or not the item's publisher was a BNA publisher. Items were also searched in our In Process File where we keep the invoices of all our monographic ordering. This was necessary to do since the BNA fiche do not always record all purchasing activity, despite the fact that books and forms not appearing on the fiche are sent. Searching the IPF also allowed me to record how we handled BNA book and form selection receipts. My own personal file, a dbase III file which I call the Subject Specialist Information System, was also checked for it is here that I record all my ordering activity, including my disposition of form selections sent to me from BNA via our collection development department. Finally, our online catalog was checked to determine the final status of the item--whether or not it entered the collection.

Relevant information from each source was recorded in a specially designed dbase III file for this study. From the BNA fiche, all subject and non-subject parameters, if given, were recorded, whether or not our library was going to receive the book or a form selection. Additional information that the BNA fiche

provides about other libraries' handling of the item was also recorded for a consensus study. If the BNA fiche did not give the required information it was sought in the IPF; all items, in fact, were double checked here to determine whether or not a BNA invoice had arrived. As a double check on the IPF my own file was checked. Finally, every item was checked in the online catalog to determine its ultimate status in the collection.

The data gathered by this method was analyzed to obtain answers to the basic questions of coverage, capture, and cataloging. These results were then analyzed by subject, publisher, document type, collecting level, and reviewing source to determine if any of these parameters shed any insight on the performance observations, especially vendor, library, and subject specialist failure. Finally, a consensus study was done to determine, in a rough sense, how other major BNA supported mass media collections handled BNA book and form selections.

Results

Table one answers our basic questions. Of 295 items, 195 items or 66% were covered by the approval plan, 100 (44%) were not. Thus just about two of every three desired items were covered by the plan. Of these 195 items, 169 (87% were captured as books or form selections while twenty three (13%) were rejected by the profile. Stated differently, nearly nine out of every ten items

covered by BNA were captured by our profile either as a book or form selection. Of these 169 items, 87 were book selections, 82 of which were eventually cataloged and 85 were form selections, 77 of which were selected to be ordered and cataloged. Thus, of the 172 items the library expected to obtain, 159 or 92% were obtained--more than nine out of every ten.

Vendor Failure

Vendor failure here occurs at two places: the approval plan can fail to cover desired items or it may fail to capture items because of a glitch in its computerized system or in its processing of books or forms. In this study, the latter type of failure is insignificant. For the most part, the vendor fulfills your order.

More alarming, however, are items left uncovered by BNA. As table 2 shows, of the 100 desired items not covered by the plan, 93 titles (48 publishers) were supposed to be covered by the plan. Only seven items (6 publishers) were non BNA publishers.

Analysis of the 93 titles shows that 88 items were from trade publishers and five were university presses. Of these titles, 36 were monographs, 25 edited anthologies (proceedings, essays, etc), eight were reference works, and 31 were textbooks. Of these textbooks twelve were second editions, 19 were first editions. Analysis of collection development level indicated that most fit within our policy statement [table 4].4 Furthermore, the

subject coverage included the type of material we wanted for our collection [table 5].

Library Failure

Library failure, like vendor failure, is of two basic types. The library can fail to articulate its subject and non-subject parameters to capture what it requires or it can handle the books and form selections in such a way that results in unsuccessful cataloging.

Of the 13 items that did not get cataloged, despite being captured by the profile, only five items could be found where procedures in the library had led to cataloging failure. Three items forms and two books were incorrectly sent to ASU West, a satellite campus. Seven items were rejected somewhere in the process--and not by this subject specialist! As it turns out, in the routing of form selections, items characterized by two subject descriptors could be sent to a number of subject specialists. In this case, items dealing with television technology were sent to the subject specialist in engineering. The other three items apparently had been rejected by another specialist , who in the general viewing area, had marked several textbooks as "too basic."

Of the twenty-three items rejected by the profile 15 were textbooks, eight were monographs, one was a reference work. There

are far too few works in this category to fret about how the profile works; it seems to exclude what we want excluded. However, I should note, four monographs which represent good contributions to the literature of journalism were given two NSPs (lower undergraduate and popular treatment) which will throw them out for us. Since this type of occurrence was infrequent, it is a trifle, but it does make me question the usefulness of some BNA indexing.5

Subject Specialist Failure

In this study subject specialist failure is simply the rejecting of a book or form that ought not have been rejected. Since in every case someone else rejected items for me, I will not claim any responsibility. However, they remain subject specialist failures, a failure in which procedures within the library were to blame.

There is a test of subject specialist failure, however, that I would like to comment on the results of. At the end of the study period, I ran my own SSIS database through the collection development searching system and found that my selected list of highly desired books would capture 59 of the 100 uncovered items and would have picked up all those covered items that remained uncataloged [table 6]. Other major selection tools were also individually searched, yielding similar results. Of course, were I to order the complete SSIS database, barring any mechanical or

processing problems, all items should be captured and cataloged--a state of affairs only the best of book budgets could possibly afford.

Fixing the Approval Plan

Vendor Failure

The most interesting substantive finding of this study was BNA's failure to cover 93 titles (48 publishers) that it was supposed to cover according to our contract, many of which would have been highly desirable for the collection.6 However the general coverage--two out of every three desired items--compares favorably with the few studies which have looked at approval plans.7 I should point out here that I feel this is quite good coverage for the most part and that it is the more realistic figure than the 90% coverage speculated in the vast approval plan survey conducted by Reidelbach and Shirk (see note 2).

The advice that comes out of this, of course, is the common sense practice of checking your collection against a list of desired items--two out of three is good but it depends upon which two out of which three and the only way you can keep on top of this is to use the old techniques.

Following good consul that the essential element in a librarian's and vendor's relationship is good communication, I will be informing BNA about the coverage problem.8 Perhaps they will be

able to offer an explanation or change their policies. Several years ago, in the course of another analysis of the approval plan in my area, I uncovered some problems concerning overlap of our domestic and British plans which had resulted in the cancelling out of books that were simultaneously published by American and British publishers. BNA was very helpful in fixing the problem. Because of this, I am very encouraged that I will be able solve this particular problem or come to some understanding.

Library Failure

Again, library failure does not seem especially significant in this study. A few items were not cataloged or rejected for the wrong reasons--nothing monumental, however, for this subject specialist to worry about.

Should we change our profile? Until I discovered that only a few items were rejected by the profile I was a key lobbyist for broadening our profile to include at least the forms for all items that fell under our subject parameters for mass media studies. To this end, I incorporated what I called a consensus study into this study. What I did was simply this: I recorded book or slip notification information for major communication collections that use the BNA domestic plan and then correlated this information to what we got and to those non-subject parameters that we exclude. Table 7 reveals that ASU Libraries is one of the more liberal collections in terms of book receipts,

conservative in regard to forms, and average in its rejections. Furthermore, table 7 shows that although ASU is more likely to reject a work that is indexed as popular--the tendency is to receive a form to review--there is a good degree of consensus about some of the other NSPs. In brief, given the performance of the profile in this area and the variable benchmarks of the consensus libraries, I cannot recommend any major changes in how our profile is structured.

Subject Specialist Action: Concluding Remarks

Both the substantive and practical findings of this study have cautioned me to take a very conservative yet pragmatic approach to working with our approval plan. The fact that the plan covered so few BNA publisher supported titles is certainly something about which to inquire. I can't ignore it and I urge everyone concerned with obtaining similar books to take a long, hard look, especially if they have been lulled into the safe attitude that "the approval plan is taking care of it."

Yet at the same time I cannot encourage everyone to take on a similar study unless they have the time and perseverance to work hard and learn much. The variables are complex, the results tentative and far from fascinating, and some conclusions obvious.

For the most part, I believe the performance factors were obvious and clear-cut. Although there is some problem with what BNA says

it covers as against what it actually covers, I found out that the plan works as it should under our profile. What is not covered can be compensated for to a degree by traditional bibliographic checking.

What has been most rewarding--and will continue so--will be working with my Subject Specialist Information System that has been developed and redeveloped over the course of this study. At present I have a pc-based system that imports bibliographic records from online databases and files that I share with other mass communication bibliographers. With this system I not only record orders, but track them, create information about ordering, retain a reference database of useful titles, and have a means of checking desired titles against the approval plan. Further studies planned with this database include an ILL study as well as a more elaborate consensus study.

In this case study I have fixed a few things and learned a great deal. The worth of the project was in its doing. Should any of you care to invest countless hours in troubleshooting your approval plans, give me a call.

NOTES

1. Since 1982, ASU Libraries has participated in the Blackwell North American approval plan for domestic imprints and the Basil Blackwell approval plan for British imprints. Our BNA plan comprises twelve subject, publisher, and non-subject profiles. Mass media studies is covered by the main and university press subprofiles. In both instances we give priority to specific subjects, including all publishers except those with whom we have standing orders, and excluding certain non-subject characteristics, eg., popular works or reprints. In the year prior to this study just over eight hundred mass media books were obtained through the approval and just over four hundred were firm ordered.

2. By far, the most ambitious evaluative study of domestic approval plans was conducted by John H. Reidelbach and Gary M. Shirk in **"Selecting an Approval Plan Vendor III: Academic Librarian's Evaluations of Eight United States Approval Plan Vendors,"** **Library Acquisitions: Practice and Theory** 9 (1985), 177-260. In this study, the authors performed a comprehensive computerized and manual search of the literature and found that as of 1985 only a few studies directly addressing vendor performance. Although they missed several important studies, namely Stanley P. Hodge's **"Evaluating the Role and Effectiveness of Approval Plans for Library Collection Development,"** in Sul H. Lee's **Issues in Acquisitions: Programs and Evaluations**,(Ann Arbor, MI, 1984), 33-54 and Gloria Moline's **An Evaluation of Approval Plan Performance: The Acquisition of Titles in Political Science** (San Jose, CA: San Jose State University, 1975), also published as ERIC document ED165760, Reidelbach and Shirk are substantially correct in saying that existing studies are too limited in the number of libraries and vendors examined to be of much general use. The authors are also very convincing when they call for large scale evaluations which would look at vendor performance across the board and attempt to model the vendor/library relationship despite all its surface diversity and variety. Nevertheless, I place tremendous importance on doing local studies, microevaluations, as it were, of one library, one vendor, one subject specialist. By doing so, I generate answers to one very important question with which the Reidelbach and Shirk study does not deal, that of the empirical or quasi-empirical basis for making statements about a particular plan's coverage. In their study they reported that BNA customers felt they were receiving the materials they sought ninety-one percent of the time. This is outstanding, if true, but as my study shows it is far less than this figure, at least in mass media studies. This observation by no means lessens the significance of Reidelbach and Shirk's study. It simply draws attention to the problem of relying upon personal opinion.

3. The classic summary of these issues can be found in F. Wilfrid Lancaster's **Measurement and Evaluation of Library Services**, (Washington, DC: Information Resources Press, 1977). Lancaster's article, **"Evaluating Collections by their Use," Collection Management** 4 (Spring/Summer 1982) 15-40 , is also instructive.

4. ASU Libraries participates in the RLG Conspectus project. The actual and desired collecting levels for mass media call number ranges follow:

	actual	desired
HM263 (Propaganda/Persuasion)	3B	3B
HN90 (Mass media)	2	3B
P87-P99.5 (Communication and Mass Media)	3B	3B
AN1-A99 (Newspapers)	1B	3B
HE7601-9755 (Radio,TV, and Telecommunications)	3B	4
KF2750-2849 (Media Law)	3B	3B
PN1990-1992 (Radio/TV Drama)	3B	3B
PN4699-6009 (Journalism)	3A	3A
TR820.5 (Photojournalism)	3B	3B

5. In discussions with subject specialists at ASU and at other libraries I have heard frequent comments that exhibit concern over how BNA indexes the books they purchase and how, in turn, such indexing affects buying and library distribution. The present study did not turn up any alarming problems. However, continued work with the approval plan has shown me that BNA indexing may cause some problems--as any type of subject and document type indexing always does. In an automated acquisitions environment precise indexing perhaps encourages high precision and low recall--a state of affairs which might make publisher-based approaches more appealing. Let librarians worry about subject and document description and vendors concern themselves with publisher coverage seems to be the message I hear from fellow librarians.

6. One could perform umpteen analyses of document type and subject and make some abstract pronouncement about BNA's performance in relation to these attributes. However, the real test for the subject specialist is more qualitative; based upon personal experience and judgement, the monographs, edited anthologies, and some of the textbooks would simply have benefited the collection.

7. Moline reported a 61.4% coverage rate of political science titles by an undisclosed vendor which a critic, H. William Axford, adjusted to 71.4% [**Library Quarterly** 48 (January 1978) 74-75]. Hodge indicates a 69% figure for sci-tech books listed in ABPR.

8. Common sense tells us that good communication between vendor and librarian/libraries is the essential resource in dealing with automated acquisitions. The theoretical importance of vendor/library communication is stated in Gary M. Shirk's essay " **Evaluating Approval Plan Vendor Performance: Toward a Rationale and Model,**" in Sul H. Lee's **Issues in Acquisitions: Programs and Evaluation**, (Ann Arbor, MI, Pierian Press, 1984), 11-32. How to communicate effectively is lively discussed in Jennifer S. Cargill and Brian Alley's **Practical Approval Plan Management**, (Phoenix, AZ, Oryx Press, 1979).

TABLE 1: STUDY RESULTS FLOW CHART

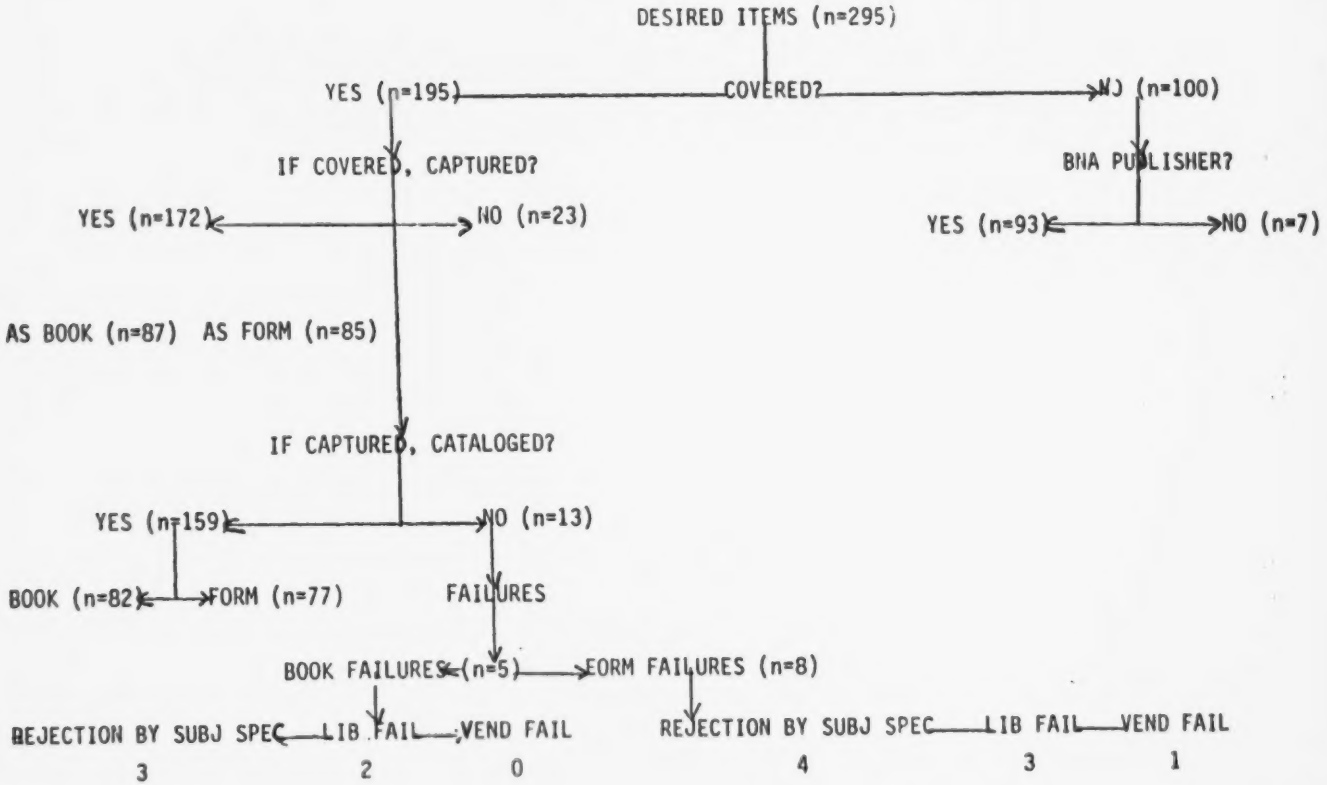

TABLE 2: COVERED AND NON-COVERED ITEMS BY PUBLISHER
(N=295)

PUBLISHER TYPE	DESIRED ITEMS	COVERED	NON-COVERED
Trade--BNA Publishers	248	159	89
University Presses--BNA Publishers	40	36	4
Associations--BNA Publishers	1	0	1
Trade--Non-BNA Publishers	6	0	6
University Presses--Non-BNA Publishers	-	-	-
Associations--Non-BNA Publishers	-	-	-
	295	195	100

TABLE 3: COVERED AND NON-COVERED ITEMS BY DOCUMENT TYPE
(n=295)

DOCUMENT TYPE	DESIRED ITEMS	COVERED	NON-COVERED	CAPTURED As Book	CAPTURED As Form	Cataloged
Monographs	152	116	36	60	51	109
Edited Anthologies	54	29	25	13	16	27
Reference	19	12	7	6	3	8
Textbooks	70	38	32	8	15	15
	295	195	100	87	85	159

TABLE 4: COVERED AND NON-COVERED ITEMS BY COLLECTING LEVEL (RLG Conspectus)
(n=295)

COLLECTING LEVEL	DESIRED ITEMS	COVERED	NON-COVERED	CAPTURED As Book	CAPTURED As Form	CATALOGED
Comprehensive [5]	--	--	--	--	--	--
Research [4]	130	101	29	53	43	96
Advanced Study [3B]	74	39	35	18	17	27
Initial Study [3A]	91	53	38	14	25	37
Basic Information [2]	--	--	--	--	--	--
Minimal [1B]	--	--	--	--	--	--
Uneven [1A]	--	--	--	--	--	--
Out of Scope [0]	--	--	--	--	--	--
	295	195	100	87	85	159

TABLE 5: COVERED AND NON-COVERED ITEMS BY SUBJECT
(n=295)

SUBJECT	DESIRED ITEMS	COVERED	NON-COVERED	CAPTURED? *** As Book	As Form	CATALOGED
Advertising	10	6	4	3	3	6
Cable	13	4	9	2	2	4
Children/TV	7	3	4	2	1	3
Bcast Journ	8	2	6	1	1	1
Frst Amend	4	4	-	2	2	4
Int Com	8	5	3	2	2	4
Mass Media Effects	31	20	11	10	10	20
Mass Media Ethics	5	4	1	3	1	4
Mass Media Law/Reg	17	13	4	4	9	13
Political Commun	19	15	4	7	8	15
Propoganda	3	1	2	0	1	1
Public Opinion	6	6	-	4	1	5
Public Relations	4	4	-	2	1	3
Radio	11	8	3	3	2	2
Newspapers	8	5	3	3	1	4
Telecommunications	44	34	10	12	17	19
TV Prgng/Bcst	48	35	13	18	14	30
Print Journalism	28	15	13	7	6	12
Other	21	11	10	2	3	9
	295	195	100	87	85	159

***23 rejected items not included

TABLE : 6 NON-COVERED ITEMS CAPTURED BY SUBJECT SPECIALIST TOOLS
(n=100)

Subject Specialist Information System	New Books in the Communications Library	Communication Booknotes
59	57	56

TABLE 7: CONSENSUS STUDY*

LIBRARY PROFILES

COLLECTION	BOOKS	FORMS	STO	REJECTION
Arizona State	85	9	0	23
University of Iowa	77	12	1	27
University of Illinois (Urbana-Champaign)	37	73	0	7
University of Missouri (Columbia)	77	36	0	4
University of Michigan	57	45	0	15
Columbia University	64	32	0	21
Stanford University	38	14	7	48
University of Texas (Austin)	57	18	2	40

*Based upon available consensus information

NON-SUBJECT PARAMETERS ANALYSIS

	COLLECTION*							
	ASU	IA	IL	MO	MI	COL	STA	TX
NSP LWER UG (0103)	0/0/15	0/0/15	5/10/0	1/13/1	0/10/5	0/13/2	0/0/15	1/7/7
POP COLLECT (0406)	0/0/1	0/1/0	0/0/1	0/0/1	0/1/0	0/0/1	0/0/1	0/0/1
REPRINT (1002)	0/0/2	0/0/3	0/3/0	0/3/0	0/2/0	0/1/2	0/0/1	0/0/1
POP TREAT (1431)	0/0/2	0/1/0	0/0/1	0/0/1	0/2/0	0/0/1	0/0/2	0/0/2

* x/y/z
x=books received
y= forms received
z= rejections